

	<110>	Malouf, Nadia		
		Nichols, Timothy		
	<120>	Purified and Isolated Platelet Calcium Channel Nucleic Acids and Polypeptides and Therapeutic and Screening Methods Using Same		
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	1490						1495					1500				
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	Phe	Tyr	Ala	Thr	Phe	Leu	Ile	Gln	Glu	His	Phe	Arg	Lys	Phe	Met	
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	aaa	cgc	caa	gag	gag	tat	tat	ggc	tat	cgg	ccc	aag	aag	gac	att	4599
	Lys	Arg	Gln	Glu	Glu	Tyr	Tyr	Gly	Tyr	Arg	Pro	Lys	Lys	Asp	Ile	
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	Val	Gln	Ile	Gln	Ala	Gly	Leu	Arg	Thr	Ile	Glu	Glu	Glu	Ala	Ala	
	1535						1540					1545				
45	ccc	gag	atc	tgt	cgc	acg	gtc	tca	gga	gac	ctg	gct	gct	gag	gag	4689
	Pro	Glu	Ile	Cys	Arg	Thr	Val	Ser	Gly	Asp	Leu	Ala	Ala	Glu	Glu	
	1550						1555					1560				

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	gag	ctg	gag	aga	gcc	atg	gtg	gag	gct	gcg	atg	gag	gag	ggg	ata	4734
	Glu	Leu	Glu	Arg	Ala	Met	Val	Glu	Ala	Ala	Met	Glu	Glu	Gly	Ile	
		1565					1570					1575				
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	Phe	Arg	Arg	Thr	Gly	Gly	Leu	Phe	Gly	Gln	Val	Asp	Asn	Phe	Leu	
		1580					1585					1590				
	gaa	agg	acc	aac	tcc	ctg	ccc	cct	gtc	atg	gcc	aat	cag	aga	ccc	4824
	Glu	Arg	Thr	Asn	Ser	Leu	Pro	Pro	Val	Met	Ala	Asn	Gln	Arg	Pro	
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	Leu	Gln	Phe	Ala	Glu	Ile	Glu	Met	Glu	Glu	Met	Glu	Ser	Pro	Val	
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	Phe	Leu	Glu	Asp	Phe	Pro	Gln	Asp	Pro	Arg	Thr	Asn	Pro	Leu	Ala	
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	cgt	gcc	aat	acc	aac	aat	gcc	aac	gcc	aat	gtc	gcc	tat	gcg	aac	4959
	Arg	Ala	Asn	Thr	Asn	Asn	Ala	Asn	Ala	Asn	Val	Ala	Tyr	Ala	Asn	
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	Ser	Asn	His	Ser	Asn	Ser	His	Val	Phe	Ser	Ser	Val	His	Tyr	Glu	
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	Arg	Glu	Phe	Pro	Glu	Glu	Thr	Glu	Thr	Pro	Ala	Thr	Arg	Gly	Arg	
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	Ala	Leu	Gly	Gln	Pro	Cys	Arg	Ser	Leu	Gly	Pro	His	Ser	Lys	Pro	
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	Cys	Val	Glu	Met	Leu	Lys	Gly	Leu	Leu	Thr	Gln	Arg	Ala	Met	Pro	
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	aga	ggc	cag	gca	cct	cct	gcc	ccc	tgc	cag	tgc	ccc	agg	gtg	gag	5184
	Arg	Gly	Gln	Ala	Pro	Pro	Ala	Pro	Cys	Gln	Cys	Pro	Arg	Val	Glu	
		1715					1720					1725				
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	Ser	Ser	Met	Pro	Glu	Asp	Arg	Lys	Ser	Ser	Thr	Pro	Gly	Ser	Leu	
		1730					1735					1740				
	cat	gag	gag	aca	ccc	cac	agc	agg	agc	acc	agg	gag	aat	act	tcc	5274
	His	Glu	Glu	Thr	Pro	His	Ser	Arg	Ser	Thr	Arg	Glu	Asn	Thr	Ser	
		1745					1750					1755				
40	agg	tgc	tca	gca	cca	gct	aca	gcc	ctg	ctg	atc	caa	aag			

	atg gca aca ggc cag gcc ctc gga gat gcc tgc caa atg gaa cca	5409
	Met Ala Thr Gly Gln Ala Leu Gly Asp Ala Cys Gln Met Glu Pro	
	1790 1795 1800	
5	gag gaa gtg gag atc atg gca aca gag cta ctg aaa gga cga gag	5454
Glu Glu Val Glu Ile Met Ala Thr Glu Leu Leu Lys Gly Arg Glu		
	1805 1810 1815	
	gcc cca gac ggc atg gcc agc tcc ctg gga tgc ctg aac ctc ggg	5499
Ala Pro Asp Gly Met Ala Ser Ser Leu Gly Cys Leu Asn Leu Gly		
	1820 1825 1830	
10	tcc tcc ctg ggc agc ctc gac caa cac cag ggc tcc cag gag acc	5544
Ser Ser Leu Gly Ser Leu Asp Gln His Gln Gly Ser Gln Glu Thr		
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	ctt att cct cca agg ctg tga	5565
15	Leu Ile Pro Pro Arg Leu	
	1850	
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	Lys Lys Pro Val Pro Glu Ile Leu Pro Arg Pro Pro Arg Ala Leu Phe	
	20 25 30	
25	Cys Leu Thr Leu Glu Asn Pro Leu Arg Lys Ala Cys Ile Ser Ile Val	
	35 40 45	
	Glu Trp Lys Pro Phe Glu Thr Ile Ile Leu Leu Thr Ile Phe Ala Asn	
	50 55 60	
30	Cys Val Ala Leu Ala Val Tyr Leu Pro Met Pro Glu Asp Asp Asn Asn	
	65 70 75 80	
	Ser Leu Asn Leu Gly Leu Glu Lys Leu Glu Tyr Phe Phe Leu Ile Val	
	85 90 95	
	Phe Ser Ile Glu Ala Ala Met Lys Ile Ile Ala Tyr Gly Phe Leu Phe	
	100 105 110	
35	His Gln Asp Ala Tyr Leu Arg Ser Gly Trp Asn Val Leu Asp Phe Thr	
	115 120 125	
	Ile Val Phe Leu Gly Val Phe Thr Val Ile Leu Glu Gln Val Asn Val	
	130 135 140	

Ile Gln Ser His Thr Ala Pro Met Ser Ser Lys Gly Ala Gly Leu Asp
145 150 155 160

Val Lys Ala Leu Arg Ala Phe Arg Val Leu Arg Pro Leu Arg Leu Val
165 170 175

5 Ser Gly Val Pro Ser Leu Gln Val Val Leu Asn Ser Ile Phe Lys Ala
180 185 190

Met Leu Pro Leu Phe His Ile Ala Leu Leu Val Leu Phe Met Val Ile
195 200 205

10 Ile Tyr Ala Ile Ile Gly Leu Glu Leu Phe Lys Gly Lys Met His Lys
210 215 220

Thr Cys Tyr Phe Ile Gly Thr Asp Ile Val Ala Thr Val Glu Asn Glu
225 230 235 240

Glu Pro Ser Pro Cys Ala Arg Thr Gly Ser Gly Arg Arg Cys Thr Ile
245 250 255

15 Asn Gly Ser Glu Cys Arg Gly Gly Cys Pro Gly Pro Asn His Gly Ile
260 265 270

Thr His Phe Asp Asn Phe Gly Phe Ser Met Leu Thr Val Tyr Gln Cys
275 280 285

20 Ile Thr Met Glu Gly Trp Thr Asp Val Leu Tyr Trp Val Asn Asp Ala
290 295 300

Ile Gly Asn Glu Trp Pro Trp Ile Tyr Phe Val Thr Leu Ile Leu Leu
305 310 315 320

Gly Ser Phe Phe Ile Leu Asn Leu Val Leu Gly Val Leu Ser Gly Glu
325 330 335

25 Phe Thr Lys Glu Arg Glu Lys Ala Lys Ser Arg Gly Thr Phe Gln Lys
340 345 350

Leu Arg Glu Lys Gln Gln Leu Asp Glu Asp Leu Arg Gly Tyr Met Ser
355 360 365

30 Trp Ile Thr Gln Gly Glu Val Met Asp Val Glu Asp Phe Arg Glu Gly
370 375 380

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Lys Leu Ser Leu Asp Glu Gly Gly Ser Asp Thr Glu Ser Leu Tyr Glu
385 390 395 400

Ile Ala Gly Leu Asn Lys Ile Ile Gln Phe Ile Arg His Trp Arg Gln
405 410 415

5 Trp Asn Arg Ile Phe Arg Trp Lys Cys His Asp Ile Val Lys Ser Lys
420 425 430

Val Phe Tyr Trp Leu Val Ile Leu Ile Val Ala Leu Asn Thr Leu Ser
435 440 445

10 Ile Ala Ser Glu His His Asn Gln Pro His Trp Leu Thr Arg Leu Gln
450 455 460

Asp Ile Ala Asn Arg Val Leu Leu Ser Leu Phe Thr Thr Glu Met Leu
465 470 475 480

Met Lys Met Tyr Gly Leu Gly Leu Arg Gln Tyr Phe Met Ser Ile Phe
485 490 495

15 Asn Arg Phe Asp Cys Phe Val Val Cys Ser Gly Ile Leu Glu Ile Leu
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Leu Val Glu Ser Gly Ala Met Thr Pro Leu Gly Ile Ser Val Leu Arg
515 520 525

20 Cys Ile Arg Leu Leu Arg Ile Phe Lys Ile Thr Lys Tyr Trp Thr Ser
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Leu Ser Asn Leu Val Ala Ser Leu Leu Asn Ser Ile Arg Ser Ile Ala
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Ser Leu Leu Leu Leu Leu Phe Leu Phe Ile Val Ile Phe Arg Leu Leu
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25 Gly Met Gln Leu Phe Gly Gly Arg Tyr Asp Phe Glu Asp Thr Glu Val
580 585 590

Arg Arg Ser Asn Phe Asp Asn Phe Pro Gln Ala Leu Ile Ser Val Phe
595 600 605

30 Gln Val Leu Thr Gly Glu Asp Trp Thr Ser Met Met Tyr Asn Gly Ile
610 615 620

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Phe Ile Ile Leu Phe Val Cys Gly Asn Tyr Ile Leu Leu Asn Val Phe
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Ala Gln Lys Ala Lys Ala Glu Glu Lys Lys Arg Arg Lys Met Ser Lys
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Leu Glu Gln Lys Pro Lys Gly Glu Gly Ile Pro Thr Thr Ala Lys Leu
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Thr Asn Lys Ile Arg Val Leu Cys His Arg Ile Val Asn Ala Thr Trp
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Arg Asn Tyr Phe Asn Met Leu Asp Leu Leu Val Val Ala Val Ser Leu
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Ile Ser Met Gly Leu Glu Ser Ser Ala Ile Ser Val Val Lys Ile Leu
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Gly Leu Lys His Val Ala Arg Cys Met Phe Val Ala Ile Ser Thr Ile
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Ser Lys Met Thr Glu Glu Glu Cys Arg Gly Tyr Tyr Tyr Val Tyr Lys
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Ser Asp Phe His Phe Asp Asn Val Leu Ser Ala Met Met Ser Leu Phe
995 1000 1005

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Ile Asp Ser Asn Ala Glu Asp Val Gly Pro Ile Tyr Asn Asn Arg
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Val Glu Met Ala Ile Phe Phe Ile Ile Tyr Ile Ile Leu Ile Ala
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25 Phe Phe Met Met Asn Ile Phe Val Gly Phe Val Ile Val Thr Phe
1055 1060 1065

Gln Glu Gln Gly Glu Thr Glu Tyr Lys Asn Cys Glu Leu Asp Lys
1070 1075 1080

30 Asn Gln Arg Gln Cys Val Gln Tyr Ala Leu Lys Ala Arg Pro Leu
1085 1090 1095

1000
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	Arg	Cys	Tyr	Ile	Pro	Lys	Asn	Pro	Tyr	Gln	Tyr	Gln	Val	Trp	Tyr
	1100						1105					1110			
	Ile	Val	Thr	Ser	Ser	Tyr	Phe	Glu	Tyr	Leu	Met	Phe	Ala	Leu	Ile
	1115						1120					1125			
5	Met	Leu	Asn	Thr	Ile	Cys	Leu	Gly	Met	Gln	His	Tyr	Asn	Gln	Ser
	1130						1135					1140			
	Glu	Gln	Met	Asn	His	Ile	Ser	Asp	Ile	Leu	Asn	Val	Ala	Phe	Thr
	1145						1150					1155			
10	Ile	Ile	Phe	Thr	Leu	Glu	Met	Ile	Leu	Lys	Leu	Met	Ala	Phe	Lys
	1160						1165					1170			
	Ala	Arg	Gly	Tyr	Phe	Gly	Asn	Pro	Trp	Asn	Val	Phe	Asp	Phe	Leu
	1175						1180					1185			
	Ile	Val	Ile	Gly	Ser	Ile	Ile	Asp	Val	Ile	Leu	Ser	Glu	Ile	Asp
	1190						1195					1200			
15	Asp	Pro	Asp	Glu	Ser	Ala	Arg	Ile	Ser	Ser	Ala	Phe	Phe	Arg	Leu
	1205						1210					1215			
	Phe	Arg	Val	Met	Arg	Leu	Ile	Lys	Leu	Leu	Ser	Arg	Ala	Glu	Gly
	1220						1225					1230			
20	Val	Arg	Thr	Leu	Leu	Trp	Thr	Phe	Ile	Lys	Ser	Phe	Gln	Ala	Leu
	1235						1240					1245			
	Pro	Tyr	Val	Ala	Leu	Leu	Ile	Val	Met	Leu	Phe	Phe	Ile	Tyr	Ala
	1250						1255					1260			
	Val	Ile	Gly	Met	Gln	Met	Phe	Gly	Lys	Ile	Ala	Leu	Val	Asp	Gly
	1265						1270					1275			
25	Thr	Gln	Ile	Asn	Arg	Asn	Asn	Asn	Phe	Gln	Thr	Phe	Pro	Gln	Ala
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	Val	Leu	Leu	Leu	Phe	Arg	Cys	Ala	Thr	Gly	Glu	Ala	Trp	Gln	Glu
	1295						1300					1305			
30	Ile	Leu	Leu	Ala	Cys	Ser	Tyr	Gly	Lys	Leu	Cys	Asp	Pro	Glu	Ser
	1310						1315					1320			

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20 25 30

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Pro Leu Ser Gly Glu Gly Pro Thr Ser Gln Pro Asn Ser Ser Lys Gln
35 40 45

30 act gtc ctg tct tgg caa gct gca atc gat gct gct aga cag gcc aag 192
Thr Val Leu Ser Trp Gln Ala Ala Ile Asp Ala Ala Arg Gln Ala Lys
50 55 60

gct gcc caa act atg agc acc tct gca ccc cca cct gta gga tct ctc 240
35 Ala Ala Gln Thr Met Ser Thr Ser Ala Pro Pro Pro Val Gly Ser Leu
65 70 75 80

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85 90 95

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100 105 110

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			755				760						765				
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	Ala	Ile	Ala	Val	Asp	Asn	Leu	Ala	Asp	Ala	Glu	Ser	Leu	Asn	Thr	Ala	
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45	Ala	Asn	Ser	Asp	Asn	Lys	Val	Thr	Ile	Asp	Asp	Tyr	Arg	Glu	Glu	Asp	
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	Ala	Phe	Thr	Ala	Ile	Phe	Thr	Val	Glu	Ile	Leu	Leu	Lys	Met	Thr	Thr	
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	1070						1075					1080				
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	1085						1090					1095				
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	1100						1105					1110				
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15	1130						1135					1140				
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	1145						1150					1155				
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	1175						1180					1185				
25	gac Asp	aaa Lys	aat Asn	cag Gln	cgt Arg	cag Gln	tgt Cys	gtt Val	gaa Glu	tac Tyr	gcc Ala	ttg Leu	aaa Lys	gca Ala	cgt Arg	3609
	1190						1195					1200				
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20 Tyr Phe Val Ser Leu Ile Ile Leu Gly Ser Phe Phe Val Leu Asn Leu
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Lys Ala Arg Gly Asp Phe Gln Lys Leu Arg Glu Lys Gln Gln Leu Glu
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Asp Pro Glu Asn Glu Glu Glu Gly Gly Glu Glu Gly Lys Arg Asn Thr
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Val Arg Leu Leu Arg Ile Phe Lys Val Thr Arg His Trp Thr Ser Leu
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Ser Asn Leu Val Ala Ser Leu Leu Asn Ser Met Lys Ser Ile Ala Ser
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25 Leu Leu Leu Leu Leu Phe Leu Phe Ile Ile Ile Phe Ser Leu Leu Gly
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Xaa is any amino acid

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Asp	Pro	Tyr	Pro	Ser	Ala	Asp	Phe	Pro	Gly	Asp	Asp	Glu	Glu	Asp	Glu		
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	Pro	Glu	Ile	Pro	Leu	Ser	Pro	Arg	Pro	Arg	Pro	Leu	Ala	Glu	Leu	Gln	
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	Leu	Lys	Glu	Lys	Ala	Val	Pro	Ile	Pro	Glu	Ala	Ser	Ser	Phe	Phe	Ile	
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45

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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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20 Phe Gln Glu Gln Gly Glu Thr Glu Tyr Lys Asn Cys Glu Leu Asp Lys
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Asn Gln Arg Gln Cys Val Gln Tyr Ala Leu Lys Ala Arg Pro Leu Arg
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Pro Glu Ile Leu Pro Arg Pro Pro Arg Ala Leu Phe Cys Leu Thr Leu
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	Thr	Leu	Ile	Pro	Pro	Arg	Leu									
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10 Lys Lys Pro Val Pro Glu Ile Leu Pro Arg Pro Pro Arg Ala Leu Phe
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Cys Leu Thr Leu Glu Asn Pro Leu Arg Lys Ala Cys Ile Ser Ile Val
35 40 45

Glu Trp Lys Pro Phe Glu Thr Ile Ile Leu Leu Thr Ile Phe Ala Asn
50 55 60

15 Cys Val Ala Leu Ala Val Tyr Leu Pro Met Pro Glu Asp Asp Asn Asn
65 70 75 80

Ser Leu Asn Leu Gly Leu Glu Lys Leu Glu Tyr Phe Phe Leu Ile Val
85 90 95

20 Phe Ser Ile Glu Ala Ala Met Lys Ile Ile Ala Tyr Gly Phe Leu Phe
100 105 110

His Gln Asp Ala Tyr Leu Arg Ser Gly Trp Asn Val Leu Asp Phe Thr
115 120 125

Ile Val Phe Leu Gly Val Phe Thr Val Ile Leu Glu Gln Val Asn Val
130 135 140

25 Ile Gln Ser His Thr Ala Pro Met Ser Ser Lys Gly Ala Gly Leu Asp
145 150 155 160

Val Lys Ala Leu Arg Ala Phe Arg Val Leu Arg Pro Leu Arg Leu Val
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30 Ser Gly Val Pro Ser Leu Gln Val Val Leu Asn Ser Ile Phe Lys Ala
180 185 190

Met Leu Pro Leu Phe His Ile Ala Leu Leu Val Leu Phe Met Val Ile
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Gly Leu Pro Asp Lys Ser Glu Glu Glu Lys Ser Thr Met Ala Lys Lys
690 695 700

Leu Glu Gln Lys Pro Lys Gly Glu Gly Ile Pro Thr Thr Ala Lys Leu
705 710 715 720

5 Lys Ile Asp Glu Phe Glu Ser Asn Val Asn Glu Val Lys Asp Pro Tyr
725 730 735

Pro Ser Ala Asp Phe Pro Gly Asp Asp Glu Glu Asp Glu Pro Glu Ile
740 745 750

10 Pro Leu Ser Pro Arg Pro Arg Pro Leu Ala Glu Leu Gln Leu Lys Glu
755 760 765

Lys Ala Val Pro Ile Pro Glu Ala Ser Ser Phe Phe Ile Phe Ser Pro
770 775 780

Thr Asn Lys Ile Arg Val Leu Cys His Arg Ile Val Asn Ala Thr Trp
785 790 795 800

15 Phe Thr Asn Phe Ile Leu Leu Phe Ile Leu Leu Ser Ser Ala Ala Leu
805 810 815

Ala Ala Glu Asp Pro Ile Arg Ala Asp Ser Met Arg Asn Gln Ile Leu
820 825 830

20 Lys His Phe Asp Ile Gly Phe Thr Ser Val Phe Thr Val Glu Ile Val
835 840 845

Leu Lys Met Thr Thr Tyr Gly Ala Phe Leu His Lys Gly Ser Phe Cys
850 855 860

Arg Asn Tyr Phe Asn Met Leu Asp Leu Leu Val Val Ala Val Ser Leu
865 870 875 880

25 Ile Ser Met Gly Leu Glu Ser Ser Ala Ile Ser Val Val Lys Ile Leu
885 890 895

Arg Val Leu Arg Val Leu Arg Pro Leu Arg Ala Ile Asn Arg Ala Lys
900 905 910

30 Gly Leu Lys His Val Ala Arg Cys Met Phe Val Ala Ile Ser Thr Ile
915 920 925

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Gly Asn Ile Val Leu Val Thr Thr Leu Leu Gln Phe Met Phe Ala Cys
930 935 940

Ile Gly Val Gln Leu Phe Lys Gly Lys Phe Phe Arg Cys Thr Asp Leu
945 950 955 960

5 Ser Lys Met Thr Glu Glu Glu Cys Arg Gly Tyr Tyr Tyr Val Tyr Lys
965 970 975

Asp Gly Asp Pro Met Gln Ile Glu Leu Arg His Arg Glu Trp Val His
980 985 990

10 Ser Asp Phe His Phe Asp Asn Val Leu Ser Ala Met Met Ser Leu Phe
995 1000 1005

Thr Val Ser Thr Phe Glu Gly Trp Pro Gln Leu Leu Tyr Lys Ala
1010 1015 1020

Ile Asp Ser Asn Ala Glu Asp Val Gly Pro Ile Tyr Asn Asn Arg
1025 1030 1035

15 Val Glu Met Ala Ile Phe Phe Ile Ile Tyr Ile Ile Leu Ile Ala
1040 1045 1050

Phe Phe Met Met Asn Ile Phe Val Gly Phe Val Ile Val Thr Phe
1055 1060 1065

20 Gln Glu Gln Gly Glu Thr Glu Tyr Lys Asn Cys Glu Leu Asp Lys
1070 1075 1080

Asn Gln Arg Gln Cys Val Gln Tyr Ala Leu Lys Ala Arg Pro Leu
1085 1090 1095

Arg Cys Tyr Ile Pro Lys Asn Pro Tyr Gln Tyr Gln Val Trp Tyr
1100 1105 1110

25 Ile Val Thr Ser Ser Tyr Phe Glu Tyr Leu Met Phe Ala Leu Ile
1115 1120 1125

Met Leu Asn Thr Ile Cys Leu Gly Met Gln His Tyr Asn Gln Ser
1130 1135 1140

30 Glu Gln Met Asn His Ile Ser Asp Ile Leu Asn Val Ala Phe Thr
1145 1150 1155

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Ile Ile Phe Thr Leu Glu Met Ile Leu Lys Leu Met Ala Phe Lys
1160 1165 1170

Ala Arg Gly Tyr Phe Gly Asn Pro Trp Asn Val Phe Asp Phe Leu
1175 1180 1185

5 Ile Val Ile Gly Ser Ile Ile Asp Val Ile Leu Ser Glu Ile Asp
1190 1195 1200

Thr Phe Leu Ala Ser Ser Gly Gly Leu Tyr Cys Leu Gly Gly Gly
1205 1210 1215

10 Cys Gly Asn Val Asp Pro Asp Glu Ser Ala Arg Ile Ser Ser Ala
1220 1225 1230

Phe Phe Arg Leu Phe Arg Val Met Arg Leu Ile Lys Leu Leu Ser
1235 1240 1245

Arg Ala Glu Gly Val Arg Thr Leu Leu Trp Thr Phe Ile Lys Ser
1250 1255 1260

15 Phe Gln Ala Leu Pro Tyr Val Ala Leu Leu Ile Val Met Leu Phe
1265 1270 1275

Phe Ile Tyr Ala Val Ile Gly Met Gln Met Phe Gly Lys Ile Ala
1280 1285 1290

20 Leu Val Asp Gly Thr Gln Ile Asn Arg Asn Asn Asn Phe Gln Thr
1295 1300 1305

Phe Pro Gln Ala Val Leu Leu Leu Phe Arg Cys Ala Thr Gly Glu
1310 1315 1320

Ala Trp Gln Glu Ile Leu Leu Ala Cys Ser Tyr Gly Lys Leu Cys
1325 1330 1335

25 Asp Pro Glu Ser Asp Tyr Ala Pro Gly Glu Glu Tyr Thr Cys Gly
1340 1345 1350

Thr Asn Phe Ala Tyr Tyr Tyr Phe Ile Ser Phe Tyr Met Leu Cys
1355 1360 1365

30 Ala Phe Leu Val Ile Asn Leu Phe Val Ala Val Ile Met Asp Asn
1370 1375 1380

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Phe Asp Tyr Leu Thr Arg Asp Trp Ser Ile Leu Gly Pro His His
1385 1390 1395

Leu Asp Glu Phe Lys Ala Ile Trp Ala Glu Tyr Asp Pro Glu Ala
1400 1405 1410

5 Lys Gly Arg Ile Lys His Leu Asp Val Val Thr Leu Leu Arg Arg
1415 1420 1425

Ile Gln Pro Pro Leu Gly Phe Gly Lys Phe Cys Pro His Arg Val
1430 1435 1440

10 Ala Cys Lys Arg Leu Val Gly Met Asn Met Pro Leu Asn Ser Asp
1445 1450 1455

Gly Thr Val Thr Phe Asn Ala Thr Leu Phe Ala Leu Val Arg Thr
1460 1465 1470

Ala Leu Lys Ile Lys Thr Glu Gly Asn Phe Glu Gln Ala Asn Glu
1475 1480 1485

15 Glu Leu Arg Ala Ile Ile Lys Lys Ile Trp Lys Arg Thr Ser Met
1490 1495 1500

Lys Leu Leu Asp Gln Val Ile Pro Pro Ile Gly Asp Asp Glu Val
1505 1510 1515

20 Thr Val Gly Lys Phe Tyr Ala Thr Phe Leu Ile Gln Glu His Phe
1520 1525 1530

Arg Lys Phe Met Lys Arg Gln Glu Glu Tyr Tyr Gly Tyr Arg Pro
1535 1540 1545

Lys Lys Asp Ile Val Gln Ile Gln Ala Gly Leu Arg Thr Ile Glu
1550 1555 1560

25 Glu Glu Ala Ala Pro Glu Ile Cys Arg Thr Val Ser Gly Asp Leu
1565 1570 1575

Ala Ala Glu Glu Glu Leu Glu Arg Ala Met Val Glu Ala Ala Met
1580 1585 1590

30 Glu Glu Gly Ile Phe Arg Arg Thr Gly Gly Leu Phe Gly Gln Val
1595 1600 1605

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30 Gln Met Glu Pro Glu Glu Val Glu Ile Met Ala Thr Glu Leu Leu
1820 1825 1830

gcc gcc atg aag atc att gcc tac ggc ttc tta ttc cac cag gac gct 573
Ala Ala Met Lys Ile Ile Ala Tyr Gly Phe Leu Phe His Gln Asp Ala
105 110 115

	tac	ctg	cgc	agt	ggc	tgg	aat	gtg	ctg	gac	ttc	acc	att	gtc	ttc	ctg	621
	Tyr	Leu	Arg	Ser	Gly	Trp	Asn	Val	Leu	Asp	Phe	Thr	Ile	Val	Phe	Leu	
				120					125					130			
5	ggg	gtc	ttc	acc	gtg	att	ctg	gaa	cag	gtt	aac	gtc	atc	caa	agc	cac	669
	Gly	Val	Phe	Thr	Val	Ile	Leu	Glu	Gln	Val	Asn	Val	Ile	Gln	Ser	His	
			135					140					145				
	aca	gcc	cca	atg	agc	agc	aaa	gga	gcc	ggc	ttg	gat	gtc	aag	gcc	ctc	717
	Thr	Ala	Pro	Met	Ser	Ser	Lys	Gly	Ala	Gly	Leu	Asp	Val	Lys	Ala	Leu	
		150					155					160					
10	aga	gcc	ttc	cga	gtg	ctc	aga	ccc	ctc	cgg	ctg	gtg	tcg	ggg	gtg	cct	765
	Arg	Ala	Phe	Arg	Val	Leu	Arg	Pro	Leu	Arg	Leu	Val	Ser	Gly	Val	Pro	
	165					170					175					180	
	agc	ctg	cag	gtg	gtc	ctg	aac	tcc	atc	ttc	aag	gcc	atg	ctc	ccc	ctc	813
15	Ser	Leu	Gln	Val	Val	Leu	Asn	Ser	Ile	Phe	Lys	Ala	Met	Leu	Pro	Leu	
				185						190					195		
	ttt	cac	atc	gcc	ctg	ctg	gtc	ctc	ttt	atg	gtc	atc	atc	tat	gcc	atc	861
	Phe	His	Ile	Ala	Leu	Leu	Val	Leu	Phe	Met	Val	Ile	Ile	Tyr	Ala	Ile	
				200					205					210			
20	atc	ggg	ctg	gag	ctc	ttc	aag	ggc	aag	atg	cac	aag	acc	tgc	tac	ttc	909
	Ile	Gly	Leu	Glu	Leu	Phe	Lys	Gly	Lys	Met	His	Lys	Thr	Cys	Tyr	Phe	
			215					220					225				
	att	ggt	aca	gat	atc	gtg	gcc	acg	gtg	gag	aat	gaa	gag	cca	tcg	ccc	957
	Ile	Gly	Thr	Asp	Ile	Val	Ala	Thr	Val	Glu	Asn	Glu	Glu	Pro	Ser	Pro	
			230				235					240					
25	tgc	gcc	agg	acg	ggc	tca	ggg	cgc	cgg	tgc	acc	atc	aat	ggc	agt	gag	1005
	Cys	Ala	Arg	Thr	Gly	Ser	Gly	Arg	Arg	Cys	Thr	Ile	Asn	Gly	Ser	Glu	
	245					250					255					260	
	tgc	cgg	ggc	ggc	tgc	cca	ggg	ccc	aac	cat	ggc	atc	acc	cac	ttc	gac	1053
30	Cys	Arg	Gly	Gly	Cys	Pro	Gly	Pro	Asn	His	Gly	Ile	Thr	His	Phe	Asp	
				265						270					275		
	aac	ttc	ggc	ttc	tcc	atg	ctc	acc	gtg	tac	cag	tgc	att	acc	atg	gag	1101
	Asn	Phe	Gly	Phe	Ser	Met	Leu	Thr	Val	Tyr	Gln	Cys	Ile	Thr	Met	Glu	
				280					285					290			
35	gga	tgg	act	gac	gtc	ctt	tac	tgg	gtc	aat	gat	gcc	atc	ggg	aat	gag	1149
	Gly	Trp	Thr	Asp	Val	Leu	Tyr	Trp	Val	Asn	Asp	Ala	Ile	Gly	Asn	Glu	
			295					300					305				
	tgg	ccc	tgg	atc	tat	ttt	gtc	acc	ctc	att	ttg	ctg	gga	tcc	ttc	ttc	1197
	Tr																

	cag	caa	cta	gat	gag	gac	ctt	cgg	ggc	tac	atg	agc	tgg	atc	acg	cag	1341
	Gln	Gln	Leu	Asp	Glu	Asp	Leu	Arg	Gly	Tyr	Met	Ser	Trp	Ile	Thr	Gln	
				360					365								
5	ggc	gag	gtc	atg	gat	gtt	gag	gac	ttc	aga	gaa	gga	aaa	ctg	tct	ttg	1389
	Gly	Glu	Val	Met	Asp	Val	Glu	Asp	Phe	Arg	Glu	Gly	Lys	Leu	Ser	Leu	
			375					380					385				
	gat	gaa	ggg	ggc	tct	gac	aca	gag	agc	ctg	tat	gaa	att	gca	ggc	ttg	1437
	Asp	Glu	Gly	Gly	Ser	Asp	Thr	Glu	Ser	Leu	Tyr	Glu	Ile	Ala	Gly	Leu	
			390				395					400					
10	aac	aaa	atc	atc	cag	ttc	atc	cga	cat	tgg	agg	cag	tgg	aac	cgc	atc	1485
	Asn	Lys	Ile	Ile	Gln	Phe	Ile	Arg	His	Trp	Arg	Gln	Trp	Asn	Arg	Ile	
	405					410					415					420	
15	ttt	cgc	tgg	aag	tgc	cat	gac	atc	gtg	aag	tcc	aag	gtc	ttc	tat	tgg	1533
	Phe	Arg	Trp	Lys	Cys	His	Asp	Ile	Val	Lys	Ser	Lys	Val	Phe	Tyr	Trp	
					425					430					435		
	ctg	gtg	att	ctc	atc	gtt	gcc	ctc	aac	acc	ctg	tct	atc	gcc	tca	gag	1581
	Leu	Val	Ile	Leu	Ile	Val	Ala	Leu	Asn	Thr	Leu	Ser	Ile	Ala	Ser	Glu	
				440					445					450			
20	cac	cac	aac	cag	ccg	cac	tgg	ctg	acc	cgt	ttg	caa	gac	att	gcc	aac	1629
	His	His	Asn	Gln	Pro	His	Trp	Leu	Thr	Arg	Leu	Gln	Asp	Ile	Ala	Asn	
			455					460					465				
	cgg	gtg	ctg	ctg	tcc	ctc	ttc	acc	act	gag	atg	ctg	atg	aag	atg	tac	1677
	Arg	Val	Leu	Leu	Ser	Leu	Phe	Thr	Thr	Glu	Met	Leu	Met	Lys	Met	Tyr	
			470				475					480					
25	ggg	ctg	ggc	ctg	cgc	cag	tac	ttc	atg	tct	atc	ttc	aac	cgc	ttc	gac	1725
	Gly	Leu	Gly	Leu	Arg	Gln	Tyr	Phe	Met	Ser	Ile	Phe	Asn	Arg	Phe	Asp	
	485					490					495					500	
30	tgc	ttc	gtg	gtg	tgc	agc	ggg	atc	ctg	gag	atc	ctg	ctg	gtg	gag	tcg	1773
	Cys	Phe	Val	Val	Cys	Ser	Gly	Ile	Leu	Glu	Ile	Leu	Leu	Val	Glu	Ser	
					505					510					515		
	ggc	gcc	atg	aca	ccc	ctg	ggc	atc	tcc	gtg	ctc	cgc	tgc	atc	cgc	ctc	1821
	Gly	Ala	Met	Thr	Pro	Leu	Gly	Ile	Ser	Val	Leu	Arg	Cys	Ile	Arg	Leu	
				520					525					530			
35	ctg	agg	atc	ttc	aag	atc	acc	aaa	tat	tgg	acg	tcg	ctg	agc	aac	ctg	1869
	Leu	Arg	Ile	Phe	Lys	Ile	Thr	Lys	Tyr	Trp	Thr	Ser	Leu	Ser	Asn	Leu	
			535				540						545				
	gtg	gca	tcc	ctg	ctc	aac	tcc	atc	cgc	tcc	atc	gcc	tcc	ctg	ctg	ctg	1917

	ttt	gac	aac	ttt	ccc	caa	gcc	ctc	atc	agc	gtc	ttc	cag	gta	ctg	aca	2061
	Phe	Asp	Asn	Phe	Pro	Gln	Ala	Leu	Ile	Ser	Val	Phe	Gln	Val	Leu	Thr	
				600					605					610			
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	Asn	Met	Leu	Asp	Leu	Leu	Val	Val	Ala	Val	Ser	Leu	Ile	Ser	Met	Gly	
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	Leu	Glu	Ser	Ser	Ala	Ile	Ser	Val	Val	Lys	Ile	Leu	Arg	Val	Leu	Arg	
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	Asn																

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	Asp Gln Val Ile Pro Pro Ile Gly Asp Asp Glu Val Thr Val Gly	
	1510 1515 1520	

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30 Asn Gly Ser Glu Cys Arg Gly Gly Cys Pro Gly Pro Asn His Gly Ile
260 265 270

30 Asn Arg Phe Asp Cys Phe Val Val Cys Ser Gly Ile Leu Glu Ile Leu
500 505 510

Leu Val Glu Ser Gly Ala Met Thr Pro Leu Gly Ile Ser Val Leu Arg
515 520 525

Cys Ile Arg Leu Leu Arg Ile Phe Lys Ile Thr Lys Tyr Trp Thr Ser
530 535 540

5 Leu Ser Asn Leu Val Ala Ser Leu Leu Asn Ser Ile Arg Ser Ile Ala
545 550 555 560

Ser Leu Leu Leu Leu Leu Phe Leu Phe Ile Val Ile Phe Arg Leu Leu
565 570 575

10 Gly Met Gln Leu Phe Gly Gly Arg Tyr Asp Phe Glu Asp Thr Glu Val
580 585 590

Arg Arg Ser Asn Phe Asp Asn Phe Pro Gln Ala Leu Ile Ser Val Phe
595 600 605

Gln Val Leu Thr Gly Glu Asp Trp Thr Ser Met Met Tyr Asn Gly Ile
610 615 620

15 Met Ala Ser Ser Gly Pro Ser Tyr Pro Gly Met Leu Val Cys Ile Tyr
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Phe Ile Ile Leu Phe Val Cys Gly Asn Tyr Ile Leu Leu Asn Val Phe
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20 Leu Ala Ile Ala Val Asp Asn Leu Ala Glu Ala Glu Ser Leu Thr Ser
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Ala Gln Lys Ala Lys Ala Glu Glu Lys Lys Arg Arg Lys Met Ser Lys
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Gly Leu Pro Asp Lys Ser Glu Glu Glu Lys Ser Thr Met Ala Lys Lys
690 695 700

25 Leu Glu Gln Lys Pro Lys Gly Glu Gly Ile Pro Thr Thr Ala Lys Leu
705 710 715 720

Lys Ile Asp Glu Phe Glu Ser Asn Val Asn Glu Val Lys Asp Pro Tyr
725 730 735

30 Pro Ser Ala Asp Phe Pro Gly Asp Asp Glu Glu Asp Glu Pro Glu Ile
740 745 750

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785 790 795 800

Phe Thr Asn Phe Ile Leu Leu Phe Ile Leu Leu Ser Ser Ala Ala Leu
805 810 815

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15 Arg Cys Tyr Ile Pro Lys Asn Pro Tyr Gln Tyr Gln Val Trp Tyr
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Ile Val Ile Gly Ser Ile Ile Asp Val Ile Leu Ser Glu Ile Asp
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10 Phe Ile Tyr Ala Val Ile Gly Met Gln Met Phe Gly Lys Ile Ala
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Leu Val Asp Gly Thr Gln Ile Asn Arg Asn Asn Asn Phe Gln Thr
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Ser Gln Glu Thr Leu Ile Pro Pro Arg Leu
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	Pro																

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	ctc	ttc	aca	gtc	tcc	acg	ttt	gag	ggc	tgg	cct	gcg	ttg	ctg	tat		3502
30	Leu	Phe	Thr	Val	Ser	Thr	Phe	Glu	Gly	Trp	Pro	Ala	Leu	Leu	Tyr		
		1115					1120					1125					
	aaa	gcc	atc	gac	tcg	aat	gga	gag	aac	atc	ggc	cca	atc	tac	aac		3547
	Lys	Ala	Ile	Asp	Ser	Asn	Gly	Glu	Asn	Ile	Gly	Pro	Ile	Tyr	Asn		
		1130					1135					1140					
35	cac	cgc	gtg	gag	atc	tcc	atc	ttc	ttc	atc	atc	tac	atc	atc	att		3592
	His	Arg	Val	Glu	Ile	Ser	Ile	Phe	Phe	Ile	Ile	Tyr	Ile	Ile	Ile		
		1145					1150					1155					
	gta	gct	ttc	ttc	atg	atg	aac	atc	ttt	gtg	ggc	ttt	gtc	atc	gtt		3637
	Val	Ala	Phe	Phe	Met	Met	Asn	Ile	Phe	Val	Gly	Phe	Val	Ile	Val		

	ccc	ttg	cgg	aga	tac	atc	ccc	aaa	aac	ccc	tac	cag	tac	aag	ttc	3772
	Pro	Leu	Arg	Arg	Tyr	Ile	Pro	Lys	Asn	Pro	Tyr	Gln	Tyr	Lys	Phe	
		1205					1210					1215				
5	tg	tac	gtg	gtg	aac	tct	tcg	cct	ttc	gaa	tac	atg	atg	ttt	gtc	3817
	Trp	Tyr	Val	Val	Asn	Ser	Ser	Pro	Phe	Glu	Tyr	Met	Met	Phe	Val	
		1220					1225					1230				
	ctc	atc	atg	ctc	aac	aca	ctc	tgc	ttg	gcc	atg	cag	cac	tac	gag	3862
	Leu	Ile	Met	Leu	Asn	Thr	Leu	Cys	Leu	Ala	Met	Gln	His	Tyr	Glu	
		1235					1240					1245				
10	cag	tcc	aag	atg	ttc	aat	gat	gcc	atg	gac	att	ctg	aac	atg	gtc	3907
	Gln	Ser	Lys	Met	Phe	Asn	Asp	Ala	Met	Asp	Ile	Leu	Asn	Met	Val	
		1250					1255					1260				
	ttc	acc	ggg	gtg	ttc	acc	gtc	gag	atg	gtt	ttg	aaa	gtc	atc	gca	3952
15	Phe	Thr	Gly	Val	Phe	Thr	Val	Glu	Met	Val	Leu	Lys	Val	Ile	Ala	
		1265					1270					1275				
	ttt	aag	cct	aag	ggg	tat	ttt	agt	gac	gcc	tg	aac	acg	ttt	gac	3997
	Phe	Lys	Pro	Lys	Gly	Tyr	Phe	Ser	Asp	Ala	Trp	Asn	Thr	Phe	Asp	
		1280					1285					1290				
20	tcc	ctc	atc	gta	atc	ggc	agc	att	ata	gac	gtg	gcc	ctc	agc	gaa	4042
	Ser	Leu	Ile	Val	Ile	Gly	Ser	Ile	Ile	Asp	Val	Ala	Leu	Ser	Glu	
		1295					1300					1305				
	gcg	gac	cca	act	gaa	agt	gaa	aat	gtc	cct	gtc	cca	act	gct	aca	4087
	Ala	Asp	Pro	Thr	Glu	Ser	Glu	Asn	Val	Pro	Val	Pro	Thr	Ala	Thr	
		1310					1315					1320				
25	cct	ggg	aac	tct	gaa	gag	agc	aat	aga	atc	tcc	atc	acc	ttt	ttc	4132
	Pro	Gly	Asn	Ser	Glu	Glu	Ser	Asn	Arg	Ile	Ser	Ile	Thr	Phe	Phe	
		1325					1330					1335				
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30	Arg	Leu	Phe	Arg	Val	Met	Arg	Leu	Val	Lys	Leu	Leu	Ser	Arg	Gly	
		1340					1345					1350				
	gaa	ggc	atc	cgg	aca	ttg	ctg	tgg	act	ttt	att	aag	tcc	ttt	cag	4222
	Glu	Gly	Ile	Arg	Thr	Leu	Leu	Trp	Thr	Phe	Ile	Lys	Ser	Phe	Gln	
		1355					1360					1365				
35	gcg	ctc	cgg	tat	gtg	gcc	ctc	ctc	ata	gcc	atg	ctg	ttc	ttc	atc	4267
	Ala	Leu	Pro	Tyr	Val	Ala	Leu	Leu	Ile	Ala	Met	Leu	Phe	Phe	Ile	
		1370					1375					1380				
	tat	gcg	gtc	att	ggc	atg	cag	atg	ttt	ggg	aaa	gtt	gcc	atg	aga	4312
	Tyr	Ala	Val	Ile	Gly	Met	Gln	Met	Phe	Gly	Lys	Val	Ala	Met	Arg	
		1385					1390					1395				
40	gat	aac	aac	cag	atc	aat	agg	aac	aat	aac	ttc	cag	acg	ttt	ccc	4357
	Asp	Asn	Asn	Gln	Ile	Asn	Arg	Asn	Asn	Asn	Phe	Gln	Thr	Phe	Pro	
		1400					1405					1410				
	cag	gcg	gtg	ctg	ctg	ctc	ttc	agg	tgt	gca	aca	ggt	gag	gcc	tgg	4402
45	Gln	Ala	Val	Leu	Leu	Leu	Phe	Arg	Cys	Ala	Thr	Gly	Glu	Ala	Trp	
		1415					1420					1425				

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	Gln	Glu	Ile	Met	Leu	Ala	Cys	Leu	Pro	Gly	Lys	Leu	Cys	Asp	Pro	
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5	gag	tca	gat	tac	aac	ccc	ggg	gag	gag	tat	aca	tgt	ggg	agc	aac	4492
	Glu	Ser	Asp	Tyr	Asn	Pro	Gly	Glu	Glu	Tyr	Thr	Cys	Gly	Ser	Asn	
	1445						1450					1455				
	ttt	gcc	att	gtc	tat	ttc	atc	agt	ttt	tac	atg	ctc	tgt	gca	ttt	4537
	Phe	Ala	Ile	Val	Tyr	Phe	Ile	Ser	Phe	Tyr	Met	Leu	Cys	Ala	Phe	
	1460						1465					1470				
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	Leu	Ile	Ile	Asn	Leu	Phe	Val	Ala	Val	Ile	Met	Asp	Asn	Phe	Asp	
	1475						1480					1485				
15	tat	ctg	acc	cgg	gac	tgg	tct	att	ttg	ggg	cct	cac	cat	tta	gat	4627
	Tyr	Leu	Thr	Arg	Asp	Trp	Ser	Ile	Leu	Gly	Pro	His	His	Leu	Asp	
	1490						1495					1500				
	gaa	ttc	aaa	aga	ata	tgg	tca	gaa	tat	gac	cct	gag	gca	aag	gga	4672
	Glu	Phe	Lys	Arg	Ile	Trp	Ser	Glu	Tyr	Asp	Pro	Glu	Ala	Lys	Gly	
	1505						1510					1515				
20	agg	ata	aaa	cac	ctt	gat	gtg	gtc	act	ctg	ctt	cga	cgc	atc	cag	4717
	Arg	Ile	Lys	His	Leu	Asp	Val	Val	Thr	Leu	Leu	Arg	Arg	Ile	Gln	
	1520						1525					1530				
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	Pro	Pro	Leu	Gly	Phe	Gly	Lys	Leu	Cys	Pro	His	Arg	Val	Ala	Cys	
	1535						1540					1545				
25	aag	aga	tta	gtt	gcc	atg	aac	atg	cct	ctc	aac	agt	gac	ggg	aca	4807
	Lys	Arg	Leu	Val	Ala	Met	Asn	Met	Pro	Leu	Asn	Ser	Asp	Gly	Thr	
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30	gtc	atg	ttt	aat	gca	acc	ctg	ttt	gct	ttg	gtt	cga	acg	gct	ctt	4852
	Val	Met	Phe	Asn	Ala	Thr	Leu	Phe	Ala	Leu	Val	Arg	Thr	Ala	Leu	
	1565						1570					1575				
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	Lys	Ile	Lys	Thr	Glu	Gly	Asn	Leu	Glu	Gln	Ala	Asn	Glu	Glu	Leu	
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35	cgg	gct	gtg	ata	aag	aaa	att	tgg	aag	aaa	acc	agc	atg	aaa	tta	4942
	Arg	Ala	Val	Ile	Lys	Lys	Ile	Trp	Lys	Lys	Thr	Ser	Met	Lys	Leu	
	1595						1600					1605				
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	Leu	Asp	Gln	Val	Val	Pro	Pro	Ala	Gly	Asp	Asp	Glu	Val	Thr	Val	
	1610						1615					1620				
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	Gly	Lys	Phe	Tyr	Ala	Thr	Phe	Leu	Ile	Gln	Asp	Tyr	Phe	Arg	Lys	
	1625						1630					1635				
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	Phe	Lys	Lys	Arg	Lys	Glu	Gln	Gly	Leu	Val	Gly	Lys	Tyr	Pro	Ala	
	1640						1645					1650				

	aag aac acc aca att gcc cta cag gcg gga tta agg aca ctg cat	5122
	Lys Asn Thr Thr Ile Ala Leu Gln Ala Gly Leu Arg Thr Leu His	
	1655 1660 1665	
5	gac att ggg cca gaa atc cgg cgt gct ata tcg tgt gat ttg caa	5167
Asp	Ile Gly Pro Glu Ile Arg Arg Ala Ile Ser Cys Asp Leu Gln	
	1670 1675 1680	
	gat gac gag cct gag gaa aca aaa cga gaa gaa gaa gat gat gtg	5212
Asp	Asp Glu Pro Glu Glu Thr Lys Arg Glu Glu Glu Asp Asp Val	
	1685 1690 1695	
10	ttc aaa aga aat ggt gcc ctg ctt gga aac cat gtc aat cat gtt	5257
Phe	Lys Arg Asn Gly Ala Leu Leu Gly Asn His Val Asn His Val	
	1700 1705 1710	
	aat agt gat agg aga gat tcc ctt cag cag acc aat acc acc cac	5302
15	Asn Ser Asp Arg Arg Asp Ser Leu Gln Gln Thr Asn Thr Thr His	
	1715 1720 1725	
	cgt ccc ctg cat gtc caa agg cct tca att cca cct gca agt gat	5347
Arg	Pro Leu His Val Gln Arg Pro Ser Ile Pro Pro Ala Ser Asp	
	1730 1735 1740	
20	act gag aaa ccg ctg ttt cct cca gca gga aat tcg gtg tgt cat	5392
Thr	Glu Lys Pro Leu Phe Pro Pro Ala Gly Asn Ser Val Cys His	
	1745 1750 1755	
	aac cat cat aac cat aat tcc ata gga aag caa gtt ccc acc tca	5437
Asn	His His Asn His Asn Ser Ile Gly Lys Gln Val Pro Thr Ser	
	1760 1765 1770	
25	aca aat gcc aat ctc aat aat gcc aat atg tcc aaa gct gcc cat	5482
Thr	Asn Ala Asn Leu Asn Asn Ala Asn Met Ser Lys Ala Ala His	
	1775 1780 1785	
	gga aag cgg ccc agc att ggg aac ctt gag cat gtg tct gaa aat	5527
30	Gly Lys Arg Pro Ser Ile Gly Asn Leu Glu His Val Ser Glu Asn	
	1790 1795 1800	
	ggg cat cat tct tcc cac aag cat gac cgg gag cct cag aga agg	5572
Gly	His His Ser Ser His Lys His Asp Arg Glu Pro Gln Arg Arg	
	1805 1810 1815	
35	tcc agt gtg aaa aga acc cgc tat tat gaa act tac att agg tcc	5617
Ser	Ser Val Lys Arg Thr Arg Tyr Tyr Glu Thr Tyr Ile Arg Ser	
	1820 1825 1830	
	gac tca gga gat gaa cag ctc cca act att tgc cgg gaa gac cca	5662
Asp	Ser Gly Asp Glu Gln Leu Pro Thr Ile Cys Arg Glu Asp Pro	
	1835 1840 1845	
40	gag ata cat ggc tat ttc agg gac ccc cac tgc ttg ggg gag cag	5707
Glu	Ile His Gly Tyr Phe Arg Asp Pro His Cys Leu Gly Glu Gln	
	1850 1855 1860	
	gag tat ttc agt agt gag gaa tgc tac gag gat gac agc tcg ccc	5752
45	Glu Tyr Phe Ser Ser Glu Glu Cys Tyr Glu Asp Asp Ser Ser Pro	
	1865 1870 1875	

	acc	tgg	agc	agg	caa	aac	tat	ggc	tac	tac	agc	aga	tac	cca	ggc	5797
	Thr	Trp	Ser	Arg	Gln	Asn	Tyr	Gly	Tyr	Tyr	Ser	Arg	Tyr	Pro	Gly	
		1880					1885					1890				
5	aga	aac	atc	gac	tct	gag	agg	ccc	cga	ggc	tac	cat	cat	ccc	caa	5842
	Arg	Asn	Ile	Asp	Ser	Glu	Arg	Pro	Arg	Gly	Tyr	His	His	Pro	Gln	
		1895					1900					1905				
	gga	ttc	ttg	gag	gac	gat	gac	tcg	ccc	gtt	tgc	tat	gat	tca	cgg	5887
	Gly	Phe	Leu	Glu	Asp	Asp	Asp	Ser	Pro	Val	Cys	Tyr	Asp	Ser	Arg	
		1910					1915					1920				
10	aga	tct	cca	agg	aga	cgc	cta	cta	cct	ccc	acc	cca	gca	tcc	cac	5932
	Arg	Ser	Pro	Arg	Arg	Arg	Leu	Leu	Pro	Pro	Thr	Pro	Ala	Ser	His	
		1925					1930					1935				
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15	Arg	Arg	Ser	Ser	Phe	Asn	Phe	Glu	Cys	Leu	Arg	Arg	Gln	Ser	Ser	
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	cag	gaa	gag	gtc	ccg	tcg	tct	ccc	atc	ttc	ccc	cat	cgc	acg	gcc	6022
	Gln	Glu	Glu	Val	Pro	Ser	Ser	Pro	Ile	Phe	Pro	His	Arg	Thr	Ala	
		1955					1960					1965				
20	ctg	cct	ctg	cat	cta	atg	cag	caa	cag	atc	atg	gca	gtt	gcc	ggc	6067
	Leu	Pro	Leu	His	Leu	Met	Gln	Gln	Gln	Ile	Met	Ala	Val	Ala	Gly	
		1970					1975					1980				
	cta	gat	tca	agt	aaa	gcc	cag	aag	tac	tca	ccg	agt	cac	tcg	acc	6112
	Leu	Asp	Ser	Ser	Lys	Ala	Gln	Lys	Tyr	Ser	Pro	Ser	His	Ser	Thr	
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	Arg	Ser	Trp	Ala	Thr	Pro	Pro	Ala	Thr	Pro	Pro	Tyr	Arg	Asp	Trp	
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30	Thr	Pro	Cys	Tyr	Thr	Pro	Leu	Ile	Gln	Val	Glu	Gln	Ser	Glu	Ala	
		2015					2020					2025				
	ctg	gac	cag	gtg	aac	ggc	agc	ctg	ccg	tcc	ctg	cac	cgc	agc	tcc	6247
	Leu	Asp	Gln	Val	Asn	Gly	Ser	Leu	Pro	Ser	Leu	His	Arg	Ser	Ser	
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	Trp	Tyr	Thr	Asp	Glu	Pro	Asp	Ile	Ser	Tyr	Arg	Thr	Phe	Thr	Pro	
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	gcc	agc	ctg	act	gtc	ccc	agc	agc	ttc	cgg	aac	aaa	aac	agc	gac	6337
	Ala	Ser	Leu	Thr	Val	Pro	Ser	Ser	Phe	Arg	Asn	Lys	Asn	Ser	Asp	
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-212-

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atg gag agt gca gcc agc acc ctg ctt aat ggg aac gtg cgt ccc 6517
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Pro Leu Ser Gly Glu Gly Pro Thr Ser Gln Pro Asn Ser Ser Lys Gln
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Thr Val Leu Ser Trp Gln Ala Ala Ile Asp Ala Ala Arg Gln Ala Lys
50 55 60

Ala Ala Gln Thr Met Ser Thr Ser Ala Pro Pro Pro Val Gly Ser Leu
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5 Ser Gln Arg Lys Arg Gln Gln Tyr Ala Lys Ser Lys Lys Gln Gly Asn
85 90 95

Ser Ser Asn Ser Arg Pro Ala Arg Ala Leu Phe Cys Leu Ser Leu Asn
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10 Asn Pro Ile Arg Arg Ala Cys Ile Ser Ile Val Glu Trp Lys Pro Phe
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Asp Ile Phe Ile Leu Leu Ala Ile Phe Ala Asn Cys Val Ala Leu Ala
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Ile Tyr Ile Pro Phe Pro Glu Asp Asp Ser Asn Ser Thr Asn His Asn
145 150 155 160

15 Leu Glu Lys Val Glu Tyr Ala Phe Leu Ile Ile Phe Thr Val Glu Thr
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Phe Leu Lys Ile Ile Ala Tyr Gly Leu Leu Leu His Pro Asn Ala Tyr
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20 Val Arg Asn Gly Trp Asn Leu Leu Asp Phe Val Ile Val Ile Val Gly
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Leu Phe Ser Val Ile Leu Glu Gln Leu Thr Lys Glu Thr Glu Gly Gly
210 215 220

Asn His Ser Ser Gly Lys Ser Gly Gly Phe Asp Val Lys Ala Leu Arg
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25 Ala Phe Arg Val Leu Arg Pro Leu Arg Leu Val Ser Gly Val Pro Ser
245 250 255

Leu Gln Val Val Leu Asn Ser Ile Ile Lys Ala Met Val Pro Leu Leu
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30 His Ile Ala Leu Leu Val Leu Phe Val Ile Ile Ile Tyr Ala Ile Ile
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Gly Leu Glu Leu Phe Ile Gly Lys Met His Lys Thr Cys Phe Phe Ala
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Trp Val Gly Pro Asn Gly Gly Ile Thr Asn Phe Asp Asn Phe Ala Phe
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10 Ala Met Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp
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Tyr Phe Val Ser Leu Ile Ile Leu Gly Ser Phe Phe Val Leu Asn Leu
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15 Val Leu Gly Val Leu Ser Gly Glu Phe Ser Lys Glu Arg Glu Lys Ala
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Lys Ala Arg Gly Asp Phe Gln Lys Leu Arg Glu Lys Gln Gln Leu Glu
420 425 430

20 Glu Asp Leu Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile
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Asp Pro Glu Asn Glu Glu Glu Gly Gly Glu Glu Gly Lys Arg Asn Thr
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Ser Met Pro Thr Ser Glu Thr Glu Ser Val Asn Thr Glu Asn Val Ser
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Arg Arg Arg Gly Ala Ala Lys Ala Gly Pro Ser Gly Cys Arg Arg Trp
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30 Gly Gln Ala Ile Ser Lys Ser Lys Leu Ser Arg Arg Trp Arg Arg Trp
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Asn Arg Phe Asn Arg Arg Arg Cys Arg Ala Ala Val Lys Ser Val Thr
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Ile Ala Asn Lys Val Leu Leu Ala Leu Phe Thr Cys Glu Met Leu Val
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10 Lys Met Tyr Ser Leu Gly Leu Gln Ala Tyr Phe Val Ser Leu Phe Asn
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Arg Phe Asp Cys Phe Val Val Cys Gly Gly Ile Thr Glu Thr Ile Leu
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Val Glu Leu Glu Ile Met Ser Pro Leu Gly Ile Ser Val Phe Arg Cys
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15 Val Arg Leu Leu Arg Ile Phe Lys Val Thr Arg His Trp Thr Ser Leu
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Ser Asn Leu Val Ala Ser Leu Leu Asn Ser Met Lys Ser Ile Ala Ser
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Gln Lys Glu Glu Ala Glu Glu Lys Glu Arg Lys Lys Ile Ala Arg Lys
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Glu Glu Glu Glu Glu Glu Asp Glu Pro Glu Val Pro Ala Gly Pro Arg
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915 920 925

Ile Arg Ser His Ser Phe Arg Asn Thr Ile Leu Gly Tyr Phe Asp Tyr
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995 1000 1005

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	Ile	Tyr	Ile	Pro	Phe	Pro	Glu	Asp	Asp	Ser	Asn	Ser	Thr	Asn	His	Asn	
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10	ttg	gaa	aaa	gta	gaa	tat	gcc	ttc	ctg	att	att	ttt	aca	gtc	gag	aca	646
	Leu	Glu	Lys	Val	Glu	Tyr	Ala	Phe	Leu	Ile	Ile	Phe	Thr	Val	Glu	Thr	
					165					170					175		
	ttt	ttg	aag	att	ata	gcg	tat	gga	tta	ttg	cta	cat	cct	aat	gct	tat	694
15	Phe	Leu	Lys	Ile	Ile	Ala	Tyr	Gly	Leu	Leu	Leu	His	Pro	Asn	Ala	Tyr	
				180					185					190			
	gtt	agg	aat	gga	tgg	aat	tta	ctg	gat	ttt	gtt	ata	gta	ata	gta	gga	742
	Val	Arg	Asn	Gly	Trp	Asn	Leu	Leu	Asp	Phe	Val	Ile	Val	Ile	Val	Gly	
			195					200					205				
20	ttg	ttt	agt	gta	att	ttg	gaa	caa	tta	acc	aaa	gaa	aca	gaa	ggc	ggg	790
	Leu	Phe	Ser	Val	Ile	Leu	Glu	Gln	Leu	Thr	Lys	Glu	Thr	Glu	Gly	Gly	
							215					220					
	aac	cac	tca	agc	ggc	aaa	tct	gga	ggc	ttt	gat	gtc	aaa	gcc	ctc	cgt	838
	Asn	His	Ser	Ser	Gly	Lys	Ser	Gly	Gly	Phe	Asp	Val	Lys	Ala	Leu	Arg	
						230					235					240	
25	gcc	ttt	cga	gtg	ttg	cga	cca	ctt	cga	cta	gtg	tca	ggg	gtg	ccc	agt	886
	Ala	Phe	Arg	Val	Leu	Arg	Pro	Leu	Arg	Leu	Val	Ser	Gly	Val	Pro	Ser	
					245					250					255		
	tta	caa	gtt	gtc	ctg	aac	tcc	att	ata	aaa	gcc	atg	gtt	ccc	ctc	ctt	934
30	Leu	Gln	Val	Val	Leu	Asn	Ser	Ile	Ile	Lys	Ala	Met	Val	Pro	Leu	Leu	
				260					265					270			
	cac	ata	gcc	ctt	ttg	gta	tta	ttt	gta	atc	ata	atc	tat	gct	att	ata	982
	His	Ile	Ala	Leu	Leu	Val	Leu	Phe	Val	Ile	Ile	Ile	Tyr	Ala	Ile	Ile	
			275					280					285				
35	gga	ttg	gaa	ctt	ttt	att	gga	aaa	atg	cac	aaa	aca	tgt	ttt	ttt	gct	1030
	Gly	Leu	Glu	Leu	Phe	Ile	Gly	Lys	Met	His	Lys	Thr	Cys	Phe	Phe	Ala	
			290				295					300					
	gac	tca	gat	atc	gta	gct	gaa	gag	gac	cca	gct	cca	tgt	gcg	ttc	tca	1078
	Asp	Ser	Asp	Ile	Val	Ala	Glu	Glu	Asp	Pro	Ala	Pro	Cys	Ala	Phe	Ser	

	gcc	atg	ctt	act	gtg	ttt	cag	tgc	atc	acc	atg	gag	ggc	tgg	aca	gac	1222
	Ala	Met	Leu	Thr	Val	Phe	Gln	Cys	Ile	Thr	Met	Glu	Gly	Trp	Thr	Asp	
			355					360					365				
5	gtg	ctc	tac	tgg	gta	aat	gat	gcg	ata	gga	tgg	gaa	tgg	cca	tgg	gtg	1270
	Val	Leu	Tyr	Trp	Val	Asn	Asp	Ala	Ile	Gly	Trp	Glu	Trp	Pro	Trp	Val	
			370				375					380					
	tat	ttt	gtt	agt	ctg	atc	atc	ctt	ggc	tca	ttt	ttc	gtc	ctt	aac	ctg	1318
	Tyr	Phe	Val	Ser	Leu	Ile	Ile	Leu	Gly	Ser	Phe	Phe	Val	Leu	Asn	Leu	
						390					395					400	
10	gtt	ctt	ggg	gtc	ctt	agt	gga	gaa	ttc	tca	aag	gaa	aga	gag	aag	gca	1366
	Val	Leu	Gly	Val	Leu	Ser	Gly	Glu	Phe	Ser	Lys	Glu	Arg	Glu	Lys	Ala	
					405					410					415		
15	aaa	gca	cgg	gga	gat	ttc	cag	aag	ctc	cgg	gag	aag	cag	cag	ctg	gag	1414
	Lys	Ala	Arg	Gly	Asp	Phe	Gln	Lys	Leu	Arg	Glu	Lys	Gln	Gln	Leu	Glu	
				420					425					430			
	gag	gat	cta	aag	ggc	tac	ttg	gat	tgg	atc	acc	caa	gct	gag	gac	atc	1462
	Glu	Asp	Leu	Lys	Gly	Tyr	Leu	Asp	Trp	Ile	Thr	Gln	Ala	Glu	Asp	Ile	
				435				440					445				
20	gat	ccg	gag	aat	gag	gaa	gaa	gga	gga	gag	gaa	ggc	aaa	cga	aat	act	1510
	Asp	Pro	Glu	Asn	Glu	Glu	Glu	Gly	Gly	Glu	Glu	Gly	Lys	Arg	Asn	Thr	
							455					460					
	agc	atg	ccc	acc	agc	gag	act	gag	tct	gtg	aac	aca	gag	aac	gtc	agc	1558
	Ser	Met	Pro	Thr	Ser	Glu	Thr	Glu	Ser	Val	Asn	Thr	Glu	Asn	Val	Ser	
						470					475					480	
25	ggg	gaa	ggc	gag	aac	cga	ggc	tgc	tgt	gga	agt	ctc	tgg	tgc	tgg	tgg	1606
	Gly	Glu	Gly	Glu	Asn	Arg	Gly	Cys	Cys	Gly	Ser	Leu	Trp	Cys	Trp	Trp	
					485					490					495		
30	aga	cgg	aga	ggc	gcg	gcc	aag	gcg	ggg	ccc	tct	ggg	tgt	cgg	cgg	tgg	1654
	Arg	Arg	Arg	Gly	Ala	Ala	Lys	Ala	Gly	Pro	Ser	Gly	Cys	Arg	Arg	Trp	
				500					505					510			
	ggg	caa	gcc	atc	tca	aaa	tcc	aaa	ctc	agc	cga	cgc	tgg	cgt	cgc	tgg	1702
	Gly	Gln	Ala	Ile	Ser	Lys	Ser	Lys	Leu	Ser	Arg	Arg	Trp	Arg	Arg	Trp	
				515				520					525				
35	aac	cga	ttc	aat	cgc	aga	aga	tgt	agg	gcc	gcc	gtg	aag	tct	gtc	acg	1750
	Asn	Arg	Phe	Asn	Arg	Arg	Arg	Cys	Arg	Ala	Ala	Val	Lys	Ser	Val	Thr	
				530				535				540					
	ttt	tac	tgg	ctg	gtt	atc	gtc	ctg	gtg	ttt	ctg	aac	acc	tta	acc	att	1798
	Phe	Tyr	Trp	Leu	Val	Ile	Val	Leu	Val	Phe	Leu	Asn	Thr	Leu	Thr		

	aaa atg tac agc ttg ggc ctc caa gca tat ttc gtc tct ctt ttc aac	1942
	Lys Met Tyr Ser Leu Gly Leu Gln Ala Tyr Phe Val Ser Leu Phe Asn	
	595 600 605	
5	cgg ttt gat tgc ttc gtg gtg tgt ggt gga atc act gag acg atc ctg	1990
	Arg Phe Asp Cys Phe Val Val Cys Gly Gly Ile Thr Glu Thr Ile Leu	
	610 615 620	
	gtg gaa ctg gaa atc atg tct ccc ctg ggg atc tct gtg ttt cgg tgt	2038
	Val Glu Leu Glu Ile Met Ser Pro Leu Gly Ile Ser Val Phe Arg Cys	
	625 630 635 640	
10	gtg cgc ctc tta aga atc ttc aaa gtg acc agg cac tgg act tcc ctg	2086
	Val Arg Leu Leu Arg Ile Phe Lys Val Thr Arg His Trp Thr Ser Leu	
	645 650 655	
15	agc aac tta gtg gca tcc tta tta aac tcc atg aag tcc atc gct tcg	2134
	Ser Asn Leu Val Ala Ser Leu Leu Asn Ser Met Lys Ser Ile Ala Ser	
	660 665 670	
	ctg ttg ctt ctg ctt ttt ctc ttc att atc atc ttt tcc ttg ctt ggg	2182
	Leu Leu Leu Leu Leu Phe Leu Phe Ile Ile Ile Phe Ser Leu Leu Gly	
	675 680 685	
20	atg cag ctg ttt ggc ggc aag ttt aat ttt gat gaa acg caa acc aag	2230
	Met Gln Leu Phe Gly Gly Lys Phe Asn Phe Asp Glu Thr Gln Thr Lys	
	690 695 700	
	cgg agc acc ttt gac aat ttc cct caa gca ctt ctc aca gtg ttc cag	2278
	Arg Ser Thr Phe Asp Asn Phe Pro Gln Ala Leu Leu Thr Val Phe Gln	
	705 710 715 720	
25	atc ctg aca ggc gaa gac tgg aat gct gtg atg tac gat ggc atc atg	2326
	Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr Asp Gly Ile Met	
	725 730 735	
30	gct tac ggg ggc cca tcc tct tca gga atg atc gtc tgc atc tac ttc	2374
	Ala Tyr Gly Gly Pro Ser Ser Ser Gly Met Ile Val Cys Ile Tyr Phe	
	740 745 750	
	atc atc ctc ttc att tgt ggt aac tat att cta ctg aat gtc ttc ttg	2422
	Ile Ile Leu Phe Ile Cys Gly Asn Tyr Ile Leu Leu Asn Val Phe Leu	
	755 760 765	
35	gcc atc gct gta gac aat ttg gct gat gct gaa agt ctg aac act gct	2470
	Ala Ile Ala Val Asp Asn Leu Ala Asp Ala Glu Ser Leu Asn Thr Ala	
	770 775 780	
	cag aaa gaa gaa gcg gaa gaa aag gag agg aaa aag att gcc aga aaa	2518
	Gln Lys Glu Glu Ala Glu Glu Lys Glu Arg Lys Lys Ile Ala Arg Lys	
	785 790 795 800	
40	gag agc cta gaa aat aaa aag aac aac aaa cca gaa gtc aac cag ata	2566
	Glu Ser Leu Glu Asn Lys Lys Asn Asn Lys Pro Glu Val Asn Gln Ile	
	805 810 815	
45	gcc aac agt gac aac aag gtt aca att gat gac tat aga gaa gag gat	2614
	Ala Asn Ser Asp Asn Lys Val Thr Ile Asp Asp Tyr Arg Glu Glu Asp	
	820 825 830	

	gaa gac aag gac ccc tat ccg cct tgc gat gtg cca gta ggg gaa gag	2662
	Glu Asp Lys Asp Pro Tyr Pro Pro Cys Asp Val Pro Val Gly Glu Glu	
	835 840 845	
5	gaa gag gaa gag gag gag gat gaa cct gag gtt cct gcc gga ccc cgt	2710
	Glu Glu Glu Glu Glu Glu Asp Glu Pro Glu Val Pro Ala Gly Pro Arg	
	850 855 860	
	cct cga agg atc tcg gag ttg aac atg aag gaa aaa att gcc ccc atc	2758
	Pro Arg Arg Ile Ser Glu Leu Asn Met Lys Glu Lys Ile Ala Pro Ile	
	865 870 875 880	
10	cct gaa ggg agc gct ttc ttc att ctt agc aag acc aac ccg atc cgc	2806
	Pro Glu Gly Ser Ala Phe Phe Ile Leu Ser Lys Thr Asn Pro Ile Arg	
	885 890 895	
	gta ggc tgc cac aag ctc atc aac cac cac atc ttc acc aac ctc atc	2854
15	Val Gly Cys His Lys Leu Ile Asn His His Ile Phe Thr Asn Leu Ile	
	900 905 910	
	ctt gtc ttc atc atg ctg agc agc gct gcc ctg gcc gca gag gac ccc	2902
	Leu Val Phe Ile Met Leu Ser Ser Ala Ala Leu Ala Ala Glu Asp Pro	
	915 920 925	
20	atc cgc agc cac tcc ttc cgg aac acg ata ctg ggt tac ttt gac tat	2950
	Ile Arg Ser His Ser Phe Arg Asn Thr Ile Leu Gly Tyr Phe Asp Tyr	
	930 935 940	
	gcc ttc aca gcc atc ttt act gtt gag atc ctg ttg aag atg aca act	2998
	Ala Phe Thr Ala Ile Phe Thr Val Glu Ile Leu Leu Lys Met Thr Thr	
	945 950 955 960	
25	ttt gga gct ttc ctc cac aaa ggg gcc ttc tgc agg aac tac ttc aat	3046
	Phe Gly Ala Phe Leu His Lys Gly Ala Phe Cys Arg Asn Tyr Phe Asn	
	965 970 975	
	ttg ctg gat atg ctg gtg gtt ggg gtg tct ctg gtg tca ttt ggg att	3094
30	Leu Leu Asp Met Leu Val Val Gly Val Ser Leu Val Ser Phe Gly Ile	
	980 985 990	
	caa tcc agt gcc atc tcc gtt gtg aag att ctg agg gtc tta agg gtc	3142
	Gln Ser Ser Ala Ile Ser Val Val Lys Ile Leu Arg Val Leu Arg Val	
	995 1000 1005	
35	ctg cgt ccc ctc agg gcc atc aac aga gca aaa gga ctt aag cac	3187
	Leu Arg Pro Leu Arg Ala Ile Asn Arg Ala Lys Gly Leu Lys His	
	1010 1015 1020	
	gtg gtc cag tgc gtc ttc gtg gcc atc cgg acc atc ggc aac atc	3232
	Val Val Gln Cys Val Phe Val Ala Ile Arg Thr Ile Gly Asn Ile	
	1025 1030 1035	
40	atg atc gtc act acc ctc ctg cag ttc atg ttt gcc tgt atc ggg	3277
	Met Ile Val Thr Thr Leu Leu Gln Phe Met Phe Ala Cys Ile Gly	
	1040 1045 1050	
45	gtc cag ttg ttc aag ggg aag ttc tat cgc tgt acg gat gaa gcc	3322
	Val Gln Leu Phe Lys Gly Lys Phe Tyr Arg Cys Thr Asp Glu Ala	
	1055 1060 1065	

	aaa	agt	aac	cct	gaa	gaa	tgc	agg	gga	ctt	ttc	atc	ctc	tac	aag	3367
	Lys	Ser	Asn	Pro	Glu	Glu	Cys	Arg	Gly	Leu	Phe	Ile	Leu	Tyr	Lys	
		1070					1075					1080				
5	gat	ggg	gat	gtt	gac	agt	cct	gtg	gtc	cgt	gaa	cgg	atc	tgg	caa	3412
	Asp	Gly	Asp	Val	Asp	Ser	Pro	Val	Val	Arg	Glu	Arg	Ile	Trp	Gln	
		1085					1090					1095				
	aac	agt	gat	ttc	aac	ttc	gac	aac	gtc	ctc	tct	gct	atg	atg	gcg	3457
	Asn	Ser	Asp	Phe	Asn	Phe	Asp	Asn	Val	Leu	Ser	Ala	Met	Met	Ala	
		1100					1105					1110				
10	ctc	ttc	aca	gtc	tcc	acg	ttt	gag	ggc	tgg	cct	gcg	ttg	ctg	tat	3502
	Leu	Phe	Thr	Val	Ser	Thr	Phe	Glu	Gly	Trp	Pro	Ala	Leu	Leu	Tyr	
		1115					1120					1125				
15	aaa	gcc	atc	gac	tcg	aat	gga	gag	aac	atc	ggc	cca	atc	tac	aac	3547
	Lys	Ala	Ile	Asp	Ser	Asn	Gly	Glu	Asn	Ile	Gly	Pro	Ile	Tyr	Asn	
		1130					1135					1140				
	cac	cgc	gtg	gag	atc	tcc	atc	ttc	ttc	atc	atc	tac	atc	atc	att	3592
	His	Arg	Val	Glu	Ile	Ser	Ile	Phe	Phe	Ile	Ile	Tyr	Ile	Ile	Ile	
		1145					1150					1155				
20	gta	gct	ttc	ttc	atg	atg	aac	atc	ttt	gtg	ggc	ttt	gtc	atc	gtt	3637
	Val	Ala	Phe	Phe	Met	Met	Asn	Ile	Phe	Val	Gly	Phe	Val	Ile	Val	
		1160					1165					1170				
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	Thr	Phe	Gln	Glu	Gln	Gly	Glu	Lys	Glu	Tyr	Lys	Asn	Cys	Glu	Leu	
		1175					1180					1185				
25	gac	aaa	aat	cag	cgt	cag	tgt	gtt	gaa	tac	gcc	ttg	aaa	gca	cgt	3727
	Asp	Lys	Asn	Gln	Arg	Gln	Cys	Val	Glu	Tyr	Ala	Leu	Lys	Ala	Arg	
		1190					1195					1200				
30	ccc	ttg	cgg	aga	tac	atc	ccc	aaa	aac	ccc	tac	cag	tac	aag	ttc	3772
	Pro	Leu	Arg	Arg	Tyr	Ile	Pro	Lys	Asn	Pro	Tyr	Gln	Tyr	Lys	Phe	
		1205					1210					1215				
	tgg	tac	gtg	gtg	aac	tct	tcg	cct	ttc	gaa	tac	atg	atg	ttt	gtc	3817
	Trp	Tyr	Val	Val	Asn	Ser	Ser	Pro	Phe	Glu	Tyr	Met	Met	Phe	Val	
		1220					1225					1230				
35	ctc	atc	atg	ctc	aac	aca	ctc	tgc	ttg	gcc	atg	cag	cac	tac	gag	3862
	Leu	Ile	Met	Leu	Asn	Thr	Leu	Cys	Leu	Ala	Met	Gln	His	Tyr	Glu	
		1235					1240					1245				
	cag	tcc	aag	atg	ttc	aat	gat	gcc	atg	gac	att	ctg	aac	atg	gtc	3907
	Gln	Ser	Lys	Met	Phe	Asn	Asp	Ala	Met	Asp	Ile	Leu	Asn	Met	Val	
		1250					1255					1260		</		

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	Ser	Leu	Ile	Val	Ile	Gly	Ser	Ile	Ile	Asp	Val	Ala	Leu	Ser	Glu	
		1295					1300					1305				
5	gcg	gac	cca	act	gaa	agt	gaa	aat	gtc	cct	gtc	cca	act	gct	aca	4087
	Ala	Asp	Pro	Thr	Glu	Ser	Glu	Asn	Val	Pro	Val	Pro	Thr	Ala	Thr	
		1310					1315					1320				
	cct	ggg	aac	tct	gaa	gag	agc	aat	aga	atc	tcc	atc	acc	ttt	ttc	4132
	Pro	Gly	Asn	Ser	Glu	Glu	Ser	Asn	Arg	Ile	Ser	Ile	Thr	Phe	Phe	
		1325					1330					1335				
10	cgt	ctt	ttc	cga	gtg	atg	cga	ttg	gtg	aag	ctt	ctc	agc	agg	ggg	4177
	Arg	Leu	Phe	Arg	Val	Met	Arg	Leu	Val	Lys	Leu	Leu	Ser	Arg	Gly	
		1340					1345					1350				
	gaa	ggc	atc	cgg	aca	ttg	ctg	tgg	act	ttt	att	aag	tcc	ttt	cag	4222
15	Glu	Gly	Ile	Arg	Thr	Leu	Leu	Trp	Thr	Phe	Ile	Lys	Ser	Phe	Gln	
		1355					1360					1365				
	gcg	ctc	ccg	tat	gtg	gcc	ctc	ctc	ata	gcc	atg	ctg	ttc	ttc	atc	4267
	Ala	Leu	Pro	Tyr	Val	Ala	Leu	Leu	Ile	Ala	Met	Leu	Phe	Phe	Ile	
		1370					1375					1380				
20	tat	gcg	gtc	att	ggc	atg	cag	atg	ttt	ggg	aaa	gtt	gcc	atg	aga	4312
	Tyr	Ala	Val	Ile	Gly	Met	Gln	Met	Phe	Gly	Lys	Val	Ala	Met	Arg	
		1385					1390					1395				
	gat	aac	aac	cag	atc	aat	agg	aac	aat	aac	ttc	cag	acg	ttt	ccc	4357
	Asp	Asn	Asn	Gln	Ile	Asn	Arg	Asn	Asn	Asn	Phe	Gln	Thr	Phe	Pro	
		1400					1405					1410				
25	cag	gcg	gtg	ctg	ctg	ctc	ttc	agg	tgt	gca	aca	ggg	gag	gcc	tgg	4402
	Gln	Ala	Val	Leu	Leu	Leu	Phe	Arg	Cys	Ala	Thr	Gly	Glu	Ala	Trp	
		1415					1420					1425				
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30	Gln	Glu	Ile	Met	Leu	Ala	Cys	Leu	Pro	Gly	Lys	Leu	Cys	Asp	Pro	
		1430					1435					1440				
	gag	tca	gat	tac	aac	ccc	ggg	gag	gag	tat	aca	tgt	ggg	agc	aac	4492
	Glu	Ser	Asp	Tyr	Asn	Pro	Gly	Glu	Glu	Tyr	Thr	Cys	Gly	Ser	Asn	
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	Phe	Ala	Ile	Val	Tyr	Phe	Ile	Ser	Phe	Tyr	Met	Leu	Cys	Ala	Phe	
		1460					1465					1470				
	ctg	atc	atc	aat	ctg	ttt	gtg	gct	gtc	atc	atg	gat	aat	ttc	gac	4582
	Leu	Ile	Ile	Asn	Leu	Phe	Val	Ala	Val	Ile	Met	Asp	Asn	Phe	Asp	
		1475					1480					1485				
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45

	act	gag	aaa	ccg	ctg	ttt	cct	cca	gca	gga	aat	tcg	gtg	tgt	cat	5392
	Thr	Glu	Lys	Pro	Leu	Phe	Pro	Pro	Ala	Gly	Asn	Ser	Val	Cys	His	
		1745					1750					1755				
5	aac	cat	cat	aac	cat	aat	tcc	ata	gga	aag	caa	gtt	ccc	acc	tca	5437
	Asn	His	His	Asn	His	Asn	Ser	Ile	Gly	Lys	Gln	Val	Pro	Thr	Ser	
		1760					1765					1770				
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	Thr	Asn	Ala	Asn	Leu	Asn	Asn	Ala	Asn	Met	Ser	Lys	Ala	Ala	His	
		1775					1780					1785				
10	gga	aag	cgg	ccc	agc	att	ggg	aac	ctt	gag	cat	gtg	tct	gaa	aat	5527
	Gly	Lys	Arg	Pro	Ser	Ile	Gly	Asn	Leu	Glu	His	Val	Ser	Glu	Asn	
		1790					1795					1800				
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15	Gly	His	His	Ser	Ser	His	Lys	His	Asp	Arg	Glu	Pro	Gln	Arg	Arg	
		1805					1810					1815				
	tcc	agt	gtg	aaa	aga	acc	cgc	tat	tat	gaa	act	tac	att	agg	tcc	5617
	Ser	Ser	Val	Lys	Arg	Thr	Arg	Tyr	Tyr	Glu	Thr	Tyr	Ile	Arg	Ser	
		1820					1825					1830				
20	gac	tca	gga	gat	gaa	cag	ctc	cca	act	att	tgc	cgg	gaa	gac	cca	5662
	Asp	Ser	Gly	Asp	Glu	Gln	Leu	Pro	Thr	Ile	Cys	Arg	Glu	Asp	Pro	
		1835					1840					1845				
	gag	ata	cat	ggc	tat	ttc	agg	gac	ccc	cac	tgc	ttg	ggg	gag	cag	5707
	Glu	Ile	His	Gly	Tyr	Phe	Arg	Asp	Pro	His	Cys	Leu	Gly	Glu	Gln	
		1850					1855					1860				
25	gag	tat	ttc	agt	agt	gag	gaa	tgc	tac	gag	gat	gac	agc	tcg	ccc	5752
	Glu	Tyr	Phe	Ser	Ser	Glu	Glu	Cys	Tyr	Glu	Asp	Asp	Ser	Ser	Pro	
		1865					1870					1875				
	acc	tgg	agc	agg	caa	aac	tat	ggc	tac	tac	agc	aga	tac	cca	ggc	5797
30	Thr	Trp	Ser	Arg	Gln	Asn	Tyr	Gly	Tyr	Tyr	Ser	Arg	Tyr	Pro	Gly	
		1880					1885					1890				
	aga	aac	atc	gac	tct	gag	agg	ccc	cga	ggc	tac	cat	cat	ccc	caa	5842
	Arg	Asn	Ile	Asp	Ser	Glu	Arg	Pro	Arg	Gly	Tyr	His	His	Pro	Gln	
		1895					1900					1905				
35	gga	ttc	ttg	gag	gac	gat	gac	tcg	ccc	gtt	tgc	tat	gat	tca	cgg	5887
	Gly	Phe	Leu	Glu	Asp	Asp	Asp	Ser	Pro	Val	Cys	Tyr	Asp	Ser	Arg	
		1910					1915					1920				
	aga	tct	cca	agg	aga	cgc	cta	cta	cct	ccc	acc	cca	gca	tcc	cac	5932
	Arg	Ser	Pro	Arg	Arg	Arg	Leu	Leu	Pro	Pro	Thr	Pro	Ala	Ser	His	
		1925					1930					1935				
40	cgg	aga	tcc	tcc	ttc	aac	ttt	gag	tgc	ctg	cgc	cgg	cag	agc	agc	5977

	ctg Leu	cct Pro	ctg Leu	cat His	cta Leu	atg Met	cag Gln	caa Gln	cag Gln	atc Ile	atg Met	gca Ala	gtt Val	gcc Ala	ggc Gly	6067
	1970						1975			1980						
5	cta Leu	gat Asp	tca Ser	agt Ser	aaa Lys	gcc Ala	cag Gln	aag Lys	tac Tyr	tca Ser	ccg Pro	agt Ser	cac His	tcg Ser	acc Thr	6112
	1985						1990			1995						
	cgg Arg	tcg Ser	tgg Trp	gcc Ala	acc Thr	cct Pro	cca Pro	gca Ala	acc Thr	cct Pro	ccc Pro	tac Tyr	cgg Arg	gac Asp	tgg Trp	6157
10	aca Thr	ccg Pro	tgc Cys	tac Tyr	acc Thr	ccc Pro	ctg Leu	atc Ile	caa Gln	gtg Val	gag Glu	cag Gln	tca Ser	gag Glu	gcc Ala	6202
	2015						2020			2025						
15	ctg Leu	gac Asp	cag Gln	gtg Val	aac Asn	ggc Gly	agc Ser	ctg Leu	ccg Pro	tcc Ser	ctg Leu	cac His	cgc Arg	agc Ser	tcc Ser	6247
	2030						2035			2040						
	tgg Trp	tac Tyr	aca Thr	gac Asp	gag Glu	ccc Pro	gac Asp	atc Ile	tcc Ser	tac Tyr	cgg Arg	act Thr	ttc Phe	aca Thr	cca Pro	6292
	2045						2050			2055						
20	gcc Ala	agc Ser	ctg Leu	act Thr	gtc Val	ccc Pro	agc Ser	agc Ser	ttc Phe	cgg Arg	aac Asn	aaa Lys	aac Asn	agc Ser	gac Asp	6337
	2060						2065			2070						
	aag Lys	cag Gln	agg Arg	agt Ser	gcg Ala	gac Asp	agc Ser	ttg Leu	gtg Val	gag Glu	gca Ala	gtc Val	ctg Leu	ata Ile	tcc Ser	6382
	2075						2080			2085						
25	gaa Glu	ggc Gly	ttg Leu	gga Gly	cgc Arg	tat Tyr	gca Ala	agg Arg	gac Asp	cca Pro	aaa Lys	ttt Phe	gtg Val	tca Ser	gca Ala	6427
	2090						2095			2100						
30	aca Thr	aaa Lys	cac His	gaa Glu	atc Ile	gct Ala	gat Asp	gcc Ala	tgt Cys	gac Asp	ctc Leu	acc Thr	atc Ile	gac Asp	gag Glu	6472
	2105						2110			2115						
	atg Met	gag Glu	agt Ser	gca Ala	gcc Ala	agc Ser	acc Thr	ctg Leu	ctt Leu	aat Asn	ggg Gly	aac Asn	gtg Val	cgt Arg	ccc Pro	6517
	2120						2125			2130						
35	cga Arg	gcc Ala	aac Asn	ggg Gly	gat Asp	gtg Val	ggc Gly	ccc Pro	ctc Leu	tca Ser	cac His	cgg Arg	cag Gln	gac Asp	tat Tyr	6562
	2135						2140			2145						
	gag Glu	cta Leu	cag Gln	gac Asp	ttt Phe	ggt Gly	cct Pro	ggc Gly	tac Tyr	agc Ser	gac Asp	gaa Glu	gag Glu	cca Pro	gac Asp	6607
	2150						2155			2160						
40	cct Pro	ggg Gly	agg Arg	gat Asp	gag Glu	gag Glu	gac Asp	ctg Leu	gcg Ala	gat Asp	gaa Glu	atg Met	ata Ile	tgc Cys	atc Ile	6652
	2165						2170			2175						
45	acc Thr	acc Thr	ttg Leu	tag	cccc	cagcga	ggggcagact	ggctcttgccc	tcaggtgggg							6704
	2180															

cgcaggagag ccaggggaaa agtgcctcat agttaggaaa gtttaggcac tagttgggag 6764
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 <212> PRT
 <213> Homo sapiens
 <400> 20

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Gln Ala Asp His Ala Asn Glu Ala Asn Tyr Ala Arg Gly Thr Arg Leu
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20 Pro Leu Ser Gly Glu Gly Pro Thr Ser Gln Pro Asn Ser Ser Lys Gln
 35 40 45

Thr Val Leu Ser Trp Gln Ala Ala Ile Asp Ala Ala Arg Gln Ala Lys
 50 55 60

Ala Ala Gln Thr Met Ser Thr Ser Ala Pro Pro Pro Val Gly Ser Leu
 65 70 75 80

25 Ser Gln Arg Lys Arg Gln Gln Tyr Ala Lys Ser Lys Lys Gln Gly Asn
 85 90 95

Ser Ser Asn Ser Arg Pro Ala Arg Ala Leu Phe Cys Leu Ser Leu Asn
 100 105 110

30 Asn Pro Ile Arg Arg Ala Cys Ile Ser Ile Val Glu Trp Lys Pro Phe
 115 120 125

Asp Ile Phe Ile Leu Leu Ala Ile Phe Ala Asn Cys Val Ala Leu Ala
 130 135 140

Ile Tyr Ile Pro Phe Pro Glu Asp Asp Ser Asn Ser Thr Asn His Asn
145 150 155 160

Leu Glu Lys Val Glu Tyr Ala Phe Leu Ile Ile Phe Thr Val Glu Thr
165 170 175

5 Phe Leu Lys Ile Ile Ala Tyr Gly Leu Leu Leu His Pro Asn Ala Tyr
180 185 190

Val Arg Asn Gly Trp Asn Leu Leu Asp Phe Val Ile Val Ile Val Gly
195 200 205

10 Leu Phe Ser Val Ile Leu Glu Gln Leu Thr Lys Glu Thr Glu Gly Gly
210 215 220

Asn His Ser Ser Gly Lys Ser Gly Gly Phe Asp Val Lys Ala Leu Arg
225 230 235 240

Ala Phe Arg Val Leu Arg Pro Leu Arg Leu Val Ser Gly Val Pro Ser
245 250 255

15 Leu Gln Val Val Leu Asn Ser Ile Ile Lys Ala Met Val Pro Leu Leu
260 265 270

His Ile Ala Leu Leu Val Leu Phe Val Ile Ile Ile Tyr Ala Ile Ile
275 280 285

20 Gly Leu Glu Leu Phe Ile Gly Lys Met His Lys Thr Cys Phe Phe Ala
290 295 300

Asp Ser Asp Ile Val Ala Glu Glu Asp Pro Ala Pro Cys Ala Phe Ser
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Gly Asn Gly Arg Gln Cys Thr Ala Asn Gly Thr Glu Cys Arg Ser Gly
325 330 335

25 Trp Val Gly Pro Asn Gly Gly Ile Thr Asn Phe Asp Asn Phe Ala Phe
340 345 350

Ala Met Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp
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30 Val Leu Tyr Trp Val Asn Asp Ala Ile Gly Trp Glu Trp Pro Trp Val
370 375 380

Tyr Phe Val Ser Leu Ile Ile Leu Gly Ser Phe Phe Val Leu Asn Leu
385 390 395 400

Val Leu Gly Val Leu Ser Gly Glu Phe Ser Lys Glu Arg Glu Lys Ala
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5 Lys Ala Arg Gly Asp Phe Gln Lys Leu Arg Glu Lys Gln Gln Leu Glu
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Glu Asp Leu Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile
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10 Asp Pro Glu Asn Glu Glu Glu Gly Gly Glu Glu Gly Lys Arg Asn Thr
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Ser Met Pro Thr Ser Glu Thr Glu Ser Val Asn Thr Glu Asn Val Ser
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Gly Glu Gly Glu Asn Arg Gly Cys Cys Gly Ser Leu Trp Cys Trp Trp
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15 Arg Arg Arg Gly Ala Ala Lys Ala Gly Pro Ser Gly Cys Arg Arg Trp
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Gly Gln Ala Ile Ser Lys Ser Lys Leu Ser Arg Arg Trp Arg Arg Trp
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20 Asn Arg Phe Asn Arg Arg Arg Cys Arg Ala Ala Val Lys Ser Val Thr
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Phe Tyr Trp Leu Val Ile Val Leu Val Phe Leu Asn Thr Leu Thr Ile
545 550 555 560

Ser Ser Glu His Tyr Asn Gln Pro Asp Trp Leu Thr Gln Ile Gln Asp
565 570 575

25 Ile Ala Asn Lys Val Leu Leu Ala Leu Phe Thr Cys Glu Met Leu Val
580 585 590

Lys Met Tyr Ser Leu Gly Leu Gln Ala Tyr Phe Val Ser Leu Phe Asn
595 600 605

30 Arg Phe Asp Cys Phe Val Val Cys Gly Gly Ile Thr Glu Thr Ile Leu
610 615 620

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Val Glu Leu Glu Ile Met Ser Pro Leu Gly Ile Ser Val Phe Arg Cys
625 630 635 640

Val Arg Leu Leu Arg Ile Phe Lys Val Thr Arg His Trp Thr Ser Leu
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5 Ser Asn Leu Val Ala Ser Leu Leu Asn Ser Met Lys Ser Ile Ala Ser
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Leu Leu Leu Leu Leu Phe Leu Phe Ile Ile Ile Phe Ser Leu Leu Gly
675 680 685

10 Met Gln Leu Phe Gly Gly Lys Phe Asn Phe Asp Glu Thr Gln Thr Lys
690 695 700

Arg Ser Thr Phe Asp Asn Phe Pro Gln Ala Leu Leu Thr Val Phe Gln
705 710 715 720

Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr Asp Gly Ile Met
725 730 735

15 Ala Tyr Gly Gly Pro Ser Ser Ser Gly Met Ile Val Cys Ile Tyr Phe
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Ile Ile Leu Phe Ile Cys Gly Asn Tyr Ile Leu Leu Asn Val Phe Leu
755 760 765

20 Ala Ile Ala Val Asp Asn Leu Ala Asp Ala Glu Ser Leu Asn Thr Ala
770 775 780

Gln Lys Glu Glu Ala Glu Glu Lys Glu Arg Lys Lys Ile Ala Arg Lys
785 790 795 800

Glu Ser Leu Glu Asn Lys Lys Asn Asn Lys Pro Glu Val Asn Gln Ile
805 810 815

25 Ala Asn Ser Asp Asn Lys Val Thr Ile Asp Asp Tyr Arg Glu Glu Asp
820 825 830

Glu Asp Lys Asp Pro Tyr Pro Pro Cys Asp Val Pro Val Gly Glu Glu
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Pro Arg Arg Ile Ser Glu Leu Asn Met Lys Glu Lys Ile Ala Pro Ile
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Pro Glu Gly Ser Ala Phe Phe Ile Leu Ser Lys Thr Asn Pro Ile Arg
885 890 895

5 Val Gly Cys His Lys Leu Ile Asn His His Ile Phe Thr Asn Leu Ile
900 905 910

Leu Val Phe Ile Met Leu Ser Ser Ala Ala Leu Ala Ala Glu Asp Pro
915 920 925

10 Ile Arg Ser His Ser Phe Arg Asn Thr Ile Leu Gly Tyr Phe Asp Tyr
930 935 940

Ala Phe Thr Ala Ile Phe Thr Val Glu Ile Leu Leu Lys Met Thr Thr
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Phe Gly Ala Phe Leu His Lys Gly Ala Phe Cys Arg Asn Tyr Phe Asn
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15 Leu Leu Asp Met Leu Val Val Gly Val Ser Leu Val Ser Phe Gly Ile
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Gln Ser Ser Ala Ile Ser Val Val Lys Ile Leu Arg Val Leu Arg Val
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20 Leu Arg Pro Leu Arg Ala Ile Asn Arg Ala Lys Gly Leu Lys His
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Val Val Gln Cys Val Phe Val Ala Ile Arg Thr Ile Gly Asn Ile
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Met Ile Val Thr Thr Leu Leu Gln Phe Met Phe Ala Cys Ile Gly
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25 Val Gln Leu Phe Lys Gly Lys Phe Tyr Arg Cys Thr Asp Glu Ala
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Lys Ser Asn Pro Glu Glu Cys Arg Gly Leu Phe Ile Leu Tyr Lys
1070 1075 1080

30 Asp Gly Asp Val Asp Ser Pro Val Val Arg Glu Arg Ile Trp Gln
1085 1090 1095

Asn Ser Asp Phe Asn Phe Asp Asn Val Leu Ser Ala Met Met Ala
1100 1105 1110

Leu Phe Thr Val Ser Thr Phe Glu Gly Trp Pro Ala Leu Leu Tyr
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5 Lys Ala Ile Asp Ser Asn Gly Glu Asn Ile Gly Pro Ile Tyr Asn
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His Arg Val Glu Ile Ser Ile Phe Phe Ile Ile Tyr Ile Ile Ile
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10 Val Ala Phe Phe Met Met Asn Ile Phe Val Gly Phe Val Ile Val
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Thr Phe Gln Glu Gln Gly Glu Lys Glu Tyr Lys Asn Cys Glu Leu
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Asp Lys Asn Gln Arg Gln Cys Val Glu Tyr Ala Leu Lys Ala Arg
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15 Pro Leu Arg Arg Tyr Ile Pro Lys Asn Pro Tyr Gln Tyr Lys Phe
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Trp Tyr Val Val Asn Ser Ser Pro Phe Glu Tyr Met Met Phe Val
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20 Leu Ile Met Leu Asn Thr Leu Cys Leu Ala Met Gln His Tyr Glu
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Gln Ser Lys Met Phe Asn Asp Ala Met Asp Ile Leu Asn Met Val
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Phe Thr Gly Val Phe Thr Val Glu Met Val Leu Lys Val Ile Ala
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25 Phe Lys Pro Lys Gly Tyr Phe Ser Asp Ala Trp Asn Thr Phe Asp
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Ser Leu Ile Val Ile Gly Ser Ile Ile Asp Val Ala Leu Ser Glu
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30 Ala Asp Pro Thr Glu Ser Glu Asn Val Pro Val Pro Thr Ala Thr
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Pro Gly Asn Ser Glu Glu Ser Asn Arg Ile Ser Ile Thr Phe Phe
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Arg Leu Phe Arg Val Met Arg Leu Val Lys Leu Leu Ser Arg Gly
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5 Glu Gly Ile Arg Thr Leu Leu Trp Thr Phe Ile Lys Ser Phe Gln
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Ala Leu Pro Tyr Val Ala Leu Leu Ile Ala Met Leu Phe Phe Ile
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10 Tyr Ala Val Ile Gly Met Gln Met Phe Gly Lys Val Ala Met Arg
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15 Gln Glu Ile Met Leu Ala Cys Leu Pro Gly Lys Leu Cys Asp Pro
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Glu Ser Asp Tyr Asn Pro Gly Glu Glu Tyr Thr Cys Gly Ser Asn
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20 Phe Ala Ile Val Tyr Phe Ile Ser Phe Tyr Met Leu Cys Ala Phe
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Leu Ile Ile Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Asp
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Tyr Leu Thr Arg Asp Trp Ser Ile Leu Gly Pro His His Leu Asp
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25 Glu Phe Lys Arg Ile Trp Ser Glu Tyr Asp Pro Glu Ala Lys Gly
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Arg Ile Lys His Leu Asp Val Val Thr Leu Leu Arg Arg Ile Gln
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30 Pro Pro Leu Gly Phe Gly Lys Leu Cys Pro His Arg Val Ala Cys
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Lys Arg Leu Val Ala Met Asn Met Pro Leu Asn Ser Asp Gly Thr
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Val Met Phe Asn Ala Thr Leu Phe Ala Leu Val Arg Thr Ala Leu
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5 Lys Ile Lys Thr Glu Gly Asn Leu Glu Gln Ala Asn Glu Glu Leu
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Arg Ala Val Ile Lys Lys Ile Trp Lys Lys Thr Ser Met Lys Leu
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Gly Lys Phe Tyr Ala Thr Phe Leu Ile Gln Asp Tyr Phe Arg Lys
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Phe Lys Lys Arg Lys Glu Gln Gly Leu Val Gly Lys Tyr Pro Ala
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15 Lys Asn Thr Thr Ile Ala Leu Gln Ala Gly Leu Arg Thr Leu His
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Asp Ile Gly Pro Glu Ile Arg Arg Ala Ile Ser Cys Asp Leu Gln
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20 Asp Asp Glu Pro Glu Glu Thr Lys Arg Glu Glu Glu Asp Asp Val
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Phe Lys Arg Asn Gly Ala Leu Leu Gly Asn His Val Asn His Val
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Asn Ser Asp Arg Arg Asp Ser Leu Gln Gln Thr Asn Thr Thr His
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25 Arg Pro Leu His Val Gln Arg Pro Ser Ile Pro Pro Ala Ser Asp
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Thr Glu Lys Pro Leu Phe Pro Pro Ala Gly Asn Ser Val Cys His
1745 1750 1755

30 Asn His His Asn His Asn Ser Ile Gly Lys Gln Val Pro Thr Ser
1760 1765 1770

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5 Gly His His Ser Ser His Lys His Asp Arg Glu Pro Gln Arg Arg
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10 Asp Ser Gly Asp Glu Gln Leu Pro Thr Ile Cys Arg Glu Asp Pro
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Glu Ile His Gly Tyr Phe Arg Asp Pro His Cys Leu Gly Glu Gln
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20 Gly Phe Leu Glu Asp Asp Asp Ser Pro Val Cys Tyr Asp Ser Arg
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25 Gln Glu Glu Val Pro Ser Ser Pro Ile Phe Pro His Arg Thr Ala
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2015 2020 2025

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Trp Tyr Thr Asp Glu Pro Asp Ile Ser Tyr Arg Thr Phe Thr Pro
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Met Glu Pro Ser
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Ser Pro Gln Asp Glu Gly Leu Arg Lys Lys Gln Pro Lys Lys Pro Leu
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ccc gag gtc ctg ccc agg ccg ccg cgg gct ctg ttc tgc ctg acc ctg 333
Pro Glu Val Leu Pro Arg Pro Pro Arg Ala Leu Phe Cys Leu Thr Leu
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Gln Asn Pro Leu Arg Lys Ala Cys Ile Ser Ile Val Glu Trp Lys Pro
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Phe Glu Thr Ile Ile Leu Leu Thr Ile Phe Ala Asn Cys Val Ala Leu
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gcc gtg tac ctg ccc atg ccc gag gat gac aac aac tcc ctg aac ctg 477
Ala Val Tyr Leu Pro Met Pro Glu Asp Asp Asn Asn Ser Leu Asn Leu
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Gly Leu Glu Lys Leu Glu Tyr Phe Phe Leu Thr Val Phe Ser Ile Glu
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Ala Ala Met Lys Ile Ile Ala Tyr Gly Phe Leu Phe His Gln Asp Ala
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	Trp	Pro	Trp	Ile	Tyr	Phe	Val	Thr	Leu	Ile	Leu	Leu	Gly	Ser	Phe	Phe	
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	Ser	Asp	Tyr	Ala	Pro	Gly	Glu	Glu	Tyr	Thr	Cys	Gly	Thr	Asn	Phe	
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	Phe	Lys	Ala	Ile	Trp	Ala	Glu	Tyr	Asp	Pro	Glu	Ala	Lys	Gly	Arg	
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	Lys	Phe	Tyr	Ala	Thr	Phe	Leu	Ile	Gln	Glu	His	Phe	Arg	Lys	Phe	
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	atc	ttc	cgg	agg	acg	gga	ggc	ctg	ttt	ggc	cag	gtg	gac	acc	ttc	5058
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5	ctg	gaa	agg	acc	aac	tcc	ctg	ccc	ccg	gtg	atg	gcc	aac	caa	aga	5103
	Leu	Glu	Arg	Thr	Asn	Ser	Leu	Pro	Pro	Val	Met	Ala	Asn	Gln	Arg	
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	gct	cgt	gcc	aat	acc	aac	aac	gcc	aat	gcc	aat	gtt	gcc	tat	ggc	5238
15	Ala	Arg	Ala	Asn	Thr	Asn	Asn	Ala	Asn	Ala	Asn	Val	Ala	Tyr	Gly	
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35	Leu	Gln	Asp	Glu	Ala	Pro	Gln	Arg	Arg	Ser	Ser	Glu	Gly	Ser	Thr	
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	Leu	Val	Arg	Gly	Gly	Leu	Asp	Thr	Leu	Ala	Ala	Asp	Ala	Gly	Phe	
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45	Val	Thr	Ala	Thr	Ser	Gln	Ala	Leu	Ala	Asp	Ala	Cys	Gln	Met	Glu	
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Pro Glu Glu Val Glu Val Ala Ala Thr Glu Leu Leu Lys Ala Arg
1825 1830 1835

gag tct gtc cag ggc atg gcc agt gtc ccg gga agc ctg agc cgc 5778
5 Glu Ser Val Gln Gly Met Ala Ser Val Pro Gly Ser Leu Ser Arg
1840 1845 1850

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Thr Leu Ile Pro Pro Arg Pro
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taaagtctct aggtctgtgg cactgg 6083

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20 <213> *Oryctolagus cuniculus*
<400> 22

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25 Lys Lys Pro Leu Pro Glu Val Leu Pro Arg Pro Pro Arg Ala Leu Phe
20 25 30

Cys Leu Thr Leu Gln Asn Pro Leu Arg Lys Ala Cys Ile Ser Ile Val
35 40 45

Glu Trp Lys Pro Phe Glu Thr Ile Ile Leu Leu Thr Ile Phe Ala Asn
50 55 60

30 Cys Val Ala Leu Ala Val Tyr Leu Pro Met Pro Glu Asp Asp Asn Asn
65 70 75 80

Ser Leu Asn Leu Gly Leu Glu Lys Leu Glu Tyr Phe Phe Leu Thr Val
85 90 95

35 Phe Ser Ile Glu Ala Ala Met Lys Ile Ile Ala Tyr Gly Phe Leu Phe
100 105 110

His Gln Asp Ala Tyr Leu Arg Ser Gly Trp Asn Val Leu Asp Phe Ile
115 120 125

Ile Val Phe Leu Gly Val Phe Thr Ala Ile Leu Glu Gln Val Asn Val
130 135 140

Ile Gln Ser Asn Thr Ala Pro Met Ser Ser Lys Gly Ala Gly Leu Asp
145 150 155 160

5 Val Lys Ala Leu Arg Ala Phe Arg Val Leu Arg Pro Leu Arg Leu Val
165 170 175

Ser Gly Val Pro Ser Leu Gln Val Val Leu Asn Ser Ile Phe Lys Ala
180 185 190

10 Met Leu Pro Leu Phe His Ile Ala Leu Leu Val Leu Phe Met Val Ile
195 200 205

Ile Tyr Ala Ile Ile Gly Leu Glu Leu Phe Lys Gly Lys Met His Lys
210 215 220

Thr Cys Tyr Tyr Ile Gly Thr Asp Ile Val Ala Thr Val Glu Asn Glu
225 230 235 240

15 Lys Pro Ser Pro Cys Ala Arg Thr Gly Ser Gly Arg Pro Cys Thr Ile
245 250 255

Asn Gly Ser Glu Cys Arg Gly Gly Trp Pro Gly Pro Asn His Gly Ile
260 265 270

20 Thr His Phe Asp Asn Phe Gly Phe Ser Met Leu Thr Val Tyr Gln Cys
275 280 285

Ile Thr Met Glu Gly Trp Thr Asp Val Leu Tyr Trp Val Asn Asp Ala
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Ile Gly Asn Glu Trp Pro Trp Ile Tyr Phe Val Thr Leu Ile Leu Leu
305 310 315 320

25 Gly Ser Phe Phe Ile Leu Asn Leu Val Leu Gly Val Leu Ser Gly Glu
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Phe Thr Lys Glu Arg Glu Lys Ala Lys Ser Arg Gly Thr Phe Gln Lys
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30 Leu Arg Glu Lys Gln Gln Leu Glu Glu Asp Leu Arg Gly Tyr Met Ser
355 360 365

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Trp Ile Thr Gln Gly Glu Val Met Asp Val Glu Asp Leu Arg Glu Gly
370 375 380

Lys Leu Ser Leu Glu Glu Gly Gly Ser Asp Thr Glu Ser Leu Tyr Glu
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5 Ile Glu Gly Leu Asn Lys Ile Ile Gln Phe Ile Arg His Trp Arg Gln
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Trp Asn Arg Val Phe Arg Trp Lys Cys His Asp Leu Val Lys Ser Arg
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10 Val Phe Tyr Trp Leu Val Ile Leu Ile Val Ala Leu Asn Thr Leu Ser
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Ile Ala Ser Glu His His Asn Gln Pro Leu Trp Leu Thr His Leu Gln
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Asp Ile Ala Asn Arg Val Leu Leu Ser Leu Phe Thr Ile Glu Met Leu
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15 Leu Lys Met Tyr Gly Leu Gly Leu Arg Gln Tyr Phe Met Ser Ile Phe
485 490 495

Asn Arg Phe Asp Cys Phe Val Val Cys Ser Gly Ile Leu Glu Leu Leu
500 505 510

20 Leu Val Glu Ser Gly Ala Met Thr Pro Leu Gly Ile Ser Val Leu Arg
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Met Ala Tyr Gly Gly Pro Ser Tyr Pro Gly Val Leu Val Cys Ile Tyr
625 630 635 640

5 Phe Ile Ile Leu Phe Val Cys Gly Asn Tyr Ile Leu Leu Asn Val Phe
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Leu Ala Ile Ala Val Asp Asn Leu Ala Glu Ala Glu Ser Leu Thr Ser
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10 Ala Gln Lys Ala Lys Ala Glu Glu Arg Lys Arg Arg Lys Met Ser Arg
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Gly Leu Pro Asp Lys Thr Glu Glu Glu Lys Ser Val Met Ala Lys Lys
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Leu Glu Gln Lys Pro Lys Gly Glu Gly Ile Pro Thr Thr Ala Lys Leu
705 710 715 720

15 Lys Val Asp Glu Phe Glu Ser Asn Val Asn Glu Val Lys Asp Pro Tyr
725 730 735

Pro Ser Ala Asp Phe Pro Gly Asp Asp Glu Glu Asp Glu Pro Glu Ile
740 745 750

20 Pro Val Ser Pro Arg Pro Arg Pro Leu Ala Glu Leu Gln Leu Lys Glu
755 760 765

Lys Ala Val Pro Ile Pro Glu Ala Ser Ser Phe Phe Ile Phe Ser Pro
770 775 780

Thr Asn Lys Val Arg Val Leu Cys His Arg Ile Val Asn Ala Thr Trp
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25 Phe Thr Asn Phe Ile Leu Leu Phe Ile Leu Leu Ser Ser Ala Ala Leu
805 810 815

Ala Ala Glu Asp Pro Ile Arg Ala Glu Ser Val Arg Asn Gln Ile Leu
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30 Gly Tyr Phe Asp Ile Ala Phe Thr Ser Val Phe Thr Val Glu Ile Val
835 840 845

Leu Lys Met Thr Thr Tyr Gly Ala Phe Leu His Lys Gly Ser Phe Cys
850 855 860

Arg Asn Tyr Phe Asn Ile Leu Asp Leu Leu Val Val Ala Val Ser Leu
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5 Ile Ser Met Gly Leu Glu Ser Ser Thr Ile Ser Val Val Lys Ile Leu
885 890 895

Arg Val Leu Arg Val Leu Arg Pro Leu Arg Ala Ile Asn Arg Ala Lys
900 905 910

10 Gly Leu Lys His Val Val Gln Cys Val Phe Val Ala Ile Arg Thr Ile
915 920 925

Gly Asn Ile Val Leu Val Thr Thr Leu Leu Gln Phe Met Phe Ala Cys
930 935 940

Ile Gly Val Gln Leu Phe Lys Gly Lys Phe Phe Ser Cys Asn Asp Leu
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15 Ser Lys Met Thr Glu Glu Glu Cys Arg Gly Tyr Tyr Tyr Val Tyr Lys
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Asp Gly Asp Pro Thr Gln Met Glu Leu Arg Pro Arg Gln Trp Ile His
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20 Asn Asp Phe His Phe Asp Asn Val Leu Ser Ala Met Met Ser Leu Phe
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Thr Val Ser Thr Phe Glu Gly Trp Pro Gln Leu Leu Tyr Arg Ala
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Ile Asp Ser Asn Glu Glu Asp Met Gly Pro Val Tyr Asn Asn Arg
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25 Val Glu Met Ala Ile Phe Phe Ile Ile Tyr Ile Ile Leu Ile Ala
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Phe Phe Met Met Asn Ile Phe Val Gly Phe Val Ile Val Thr Phe
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30 Gln Glu Gln Gly Glu Thr Glu Tyr Lys Asn Cys Glu Leu Asp Lys
1070 1075 1080

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	1175						1180					1185			
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	1190						1195					1200			
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	1355						1360					1365			
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	1385						1390					1395			
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	1400						1405					1410			
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	1475						1480					1485			
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Lys Lys Asp Thr Val Gln Ile Gln Ala Gly Leu Arg Thr Ile Glu
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5 Glu Glu Ala Ala Pro Glu Ile Arg Arg Thr Ile Ser Gly Asp Leu
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1670 1675 1680

Val His Cys Glu Arg Glu Phe Pro Gly Glu Ala Glu Thr Pro Ala
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Ala Gly Arg Gly Ala Leu Ser His Ser His Arg Ala Leu Gly Pro
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25 His Ser Lys Pro Cys Ala Gly Lys Leu Asn Gly Gln Leu Val Gln
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Pro Gly Met Pro Ile Asn Gln Ala Pro Pro Ala Pro Cys Gln Gln
1730 1735 1740

30 Pro Ser Thr Asp Pro Pro Glu Arg Gly Gln Arg Arg Thr Ser Leu
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Thr Gly Ser Leu Gln Asp Glu Ala Pro Gln Arg Arg Ser Ser Glu
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Gly Ser Thr Pro Arg Arg Pro Ala Pro Ala Thr Ala Leu Leu Ile
1775 1780 1785

5 Gln Glu Ala Leu Val Arg Gly Gly Leu Asp Thr Leu Ala Ala Asp
1790 1795 1800

Ala Gly Phe Val Thr Ala Thr Ser Gln Ala Leu Ala Asp Ala Cys
1805 1810 1815

10 Gln Met Glu Pro Glu Glu Val Glu Val Ala Ala Thr Glu Leu Leu
1820 1825 1830

Lys Ala Arg Glu Ser Val Gln Gly Met Ala Ser Val Pro Gly Ser
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Leu Ser Arg Arg Ser Ser Leu Gly Ser Leu Asp Gln Val Gln Gly
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